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LIMITATION OF DISTANCE SCALE RATES

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PART ONE

GENERAL OUTLINES

I. INTRODUCTION

A. CURRENT NOTION

Undoubtedly the current notion of social and economic justice is that railway charges should vary more or less in proportion to the distance of haul. There is no valid reason why a charge at an intermediate point should be higher than that given at a more distant point, or even the same as at the latter, but it ought to be lower than the latter according as the distance covered is shorter. The mere fact, that a higher rate is quoted at a nearer point on the same line or route over the same direction for a unit of traffic of the identical description constitutes a gross discrimination on the part of the carrier, the more distant point being accorded an unduly preferential treatment at the expense of the less distant point. If the natural advantage in the form of competition is answerable for the favorable charge at a more distant place, the natural advantage, which a nearer place enjoys in the form of the shorter distance of haul, ought to be taken into account in the determination of the equitable charge for that point. The conveyance of traffic over a longer distance involves, no doubt, a greater service and cost, and, therefore, the compensation for it should be greater in proportion. The idea of charging a higher rate on the traffic, which derives a lesser service and incurs a smaller cost because of the shorter distance of transportation is per se entirely repugnant to the concept of

justice, which a common carrier is required to maintain in the making of its charges and the rendering of its services.

A bill was introduced by Senator Gooding to the sixty-eighth Congress to amend Section 4 of the Interstate Commerce Act, so as to make the long and short haul clause more rigid in actual application, the relief to the carriers to be limited only to the case of competition by a round-about rail route with a direct rail route. Hearings were exhaustively carried out before the Committee on Interstate Commerce of the Senate from February to March of last year, where extensive testimony was taken from the interested public, the carriers, and the Interstate Commerce Commission. Throughout the contentions of the proponents of the rigid application of the long and short haul principle, as represented by the senator and the Intermountain interests, the ground on which they stood in a vigorous attack against the carriers and the Interstate Commerce Commission, was that absolute justice could be maintained only through the establishment of such rates as directly conformed with the distances of haul, entirely without regard to competition, whether transportation, market or industrial; the relative financial status of the carriers; or other economic considerations. They were opposed not only to the possible resumption of lower rates to the Coastal termini, but also to the maintainance of the present blanket rates covering the termini and the Intermountain points, and laid the blame on the railways and the Interstate Commerce Commission for the slow developments or abortive failures of the Intermountain industrial and commer-

cial enterprises. They had long remained a sacrifice for the expansion of the Pacific Coast, and the only sure remedy was the readjustment of the railway rates in strict conformity with the distance principle, which would be impossible under the existing flexible provision of Section 4 of the Act. They were, apparently, perfectly confident of the justice which would result from the operation of the proposed amendment, having not the slightest doubt as to the consequent prosperity of the Intermountain Territory and the carriers serving it.

The contention of this kind arose, and will again arise, because of departures from the long and short haul principle, as embodied in the fourth section of the Interstate Commerce Act. The intermediate people argue that the distance principle conforms with the concept of social, if not economic, justice, in opposition to the attempts of the favorably situated localities on the basis of their natural advantages. This has been the case particularly with the Southern and the Transcontinental situations as to rate structures as a whole, and everywhere as to individual rate adjustments.

B. TREND

The history of the development of American railway charges indicates that the trend has been outstandingly for the adjustment of the structures step by step to conform to the distance principle. There may have been particular cases where the rate systems within limited areas were reconstructed roughly on distance scales, largely as the result of the voluntary attempts of the carriers concerned to eliminate their inter-railway com-

petition, which would otherwise have grown to such severity as to threaten their financial situation, but generally, the adjustments on the basis of the distance principle were brought about by way of a compromise between the seemingly conflicting interests of the unfavorably located public and the carriers concerned. Wherever a complaint arose against an alleged undue discrimination in the matter of long and short haul rates, the general practice available to appease it was arbitrarily to force the carrier more or less to conform to the distance principle, only to incur the fresh complaint of the public who were adversely affected by the resultant adjustment, on the ground that they were unreasonably deprived of their natural advantages, and that the adjustment seriously disturbed the commercial situation which had long been settled on the basis of the balance of economic forces. In the case of such complaints, the distance principle seems to have been employed as a powerful weapon to suppress the grievances.

The apparently arbitrary, unreasonable, and inconsistent rate structions of the country were at once held to be contrary to the sense of justice, without the slightest regard to the undeniable fact that railway rates and fares are determined solely by economic forces in the long run, and are not the product of the arbitrary operation of railway managers. The distance principle, if it is to be a principle of universal application, must of necessity distregard the fundamental concept of railway rate making, in which the distance factor plays a very small role. As a matter of fact, however, the er-

roneous idea of distance rates seems to have gained the upper hand of the contentions advanced by the railways in maintaining their position on the basis of economic considerations. Almost every time an adjustment was made of rates complained of, it was condemned for the simple reason of unreasonableness, and rates were readjusted so as finally to conform to the distance principle. Undoubtedly, there may have been arbitrary manipulations on the part of the carriers in the making of some of their charges out of some personal considerations, particularly in the early period of the railway operation, when there was no adequate agency of public regulation, or in other cases wholly unjustifiable rates were made in the intense desire for business on the part of the railways. All these abuses must of course be removed through public regulation, since they were the arbitrary product of the carriers and were not justifiable by any test of social and economic justice. On the whole, however, the rate systems prevailing at any given time are the result of the interplay of various economic forces, which are entirely beyond the control of the carriers. They may seem very irregular, inconsistent, and complicated, but the railways are not at all responsible therefor. They are simply the result of the natural process of the free operation of economic factors. A simple, methodical, and systematic tariff is highly desirable, but it is open to a serious doubt whether a rate structure, which is very complex due to its natural growth, should be adopted simply for the sake of simplicity. A lower charge for a shorter haul is very commendable, but it is highly questionable to completely destroy the long-established economic structure, solely for the sake of the distance principle.

Apart from the question of social and economic justice, the tendency in the adjustment of the prevailing rate systems has been towards the adoption of some form or other of distance scale rates, and this trend has been very conspicuous particularly of late years. In the Central Freight Association Territory, distance scale rates have long been in effect, although subject to numerous important exceptions. Far from being uniformly applied, they are made applicable rigidly to such class traffic only as is not competitive in nature and relatively small in volume. The more important commodities are moved with no, or at most little, reference to the distance tariffs. Furthermore, the territories covered are split into several different zones for different tariffs. Besides, the computation of the distances of haul is not always made on the basis of the actual mileage, but largely on the basing point system. In the Central Freight Association Territory, locally on the line of one railroad, the class rates are published on actual mileage from station to station in the majority of cases, but jointly over more than two different lines, the rates are quoted on the basis of figuring the joint mileages between principal points within the Territory selected as basing points. Between the points which are outside of these basing points, the rates are calculated on the basis of the rates in effect from and to the selected basing points taking the highest rates (or the longest mileage) between which the non-basing points are located. The basing points are generally junction points and commercially important places, although

certain local points have been added as basing points in cases where the distance between the above-mentioned points exceeded twenty miles. A distance tariff remains as such, only as long as it is based on actual mileage, and, therefore, the distance tariffs on the Central Freight Association Territory are at the most a bone without marrow. Another weakness in the system lies in the group relationships still continuing to exist. For instance, the class rates between Chicago on the one hand, and Buffalo and Pittsburgh on the other are made the same, although the distance between Chicago and Pittsburgh is 468 miles, while the distance between Chicago and Buffalo is 511 miles. The relationship between Buffalo and Pittsburgh on the east and Chicago on the west has been in existence for such a long time that it is impossible to bring about conformity to the distance scale without disturbing the economic status. Further, these Chicago, Pittsburgh, and Buffalo rates are applicable not only to and from those points proper, but also to and from a large number of points which are grouped with these points. As regards the commodity rates, it is generally accepted that they are also related to the distances of haul, but, as a matter of fact, they are not so closely connected with the distance scales, for they are based on certain relationships with the class rates, which, as stated before, do not largely adhere to actual mileage. Besides, there are important commodities, which do not bear any definite relationship with the class rates, but the rates on which are made entirely independently. In the case of the dis-

tance scales applicable in the New England Freight Association Territory, the economic conditions are more favorable for the closer application of their scale rates than in the Central Freight Association Territory, but it does not mean that the distances between stations are calculated always on the actual mileage basis to which the scales apply. There are numerous instances where mileages are arbitrarily designated irrespective of the actual distances, and also where commodities are specified to which specific rates are to apply, particularly in the case of the traffic to and from the other territories.

The fact that those distance rates are subject to countless exceptions, and that they are, consequently, applicable, in the strict sense of the distance rates, to only insignificant non-competitive, local, class traffic and some other commodities bearing definite relationships therewith, completely defeats the general idea that the above-mentioned territories are typical of the application of the distance principle to their actual rates. In reality, those scale rates are mostly a mere name in actual application, but the situation serves to show clearly the general concept as to what the railway rate system ought to be, and the actual trend thereof.

The current notion and the recent tendency appear in a growing intensity in the Southern Territory and elsewhere. Taking advantage of the changed economic conditions, both transportation and industrial, in the South, where the long and short haul principle has long been departed from probably to the

greatest extent of all the other territories of the country, the shipping public and the state regulatory agencies recently suggested several plans for the thorough overhaul of the existing rate structures which are alleged to be gross anomalies. The carriers were forced to work out their own plans, tired of the incessant vociferous complaints and the constant pressure of the State and the Federal Commissions. The result of the Interstate Commerce Commission's investigations which lasted from February, 1922, to July, 1925, was that distance scale rates were determined, to be carried into effect on July 1st of the present year. The approved schedule is more elaborate than those in operation within the Central Freight Association and the New England Freight Association Territories, and is to cover the entire area of the Southeastern Territory as a single unit. Of course, there are to be numerous exceptions to the regular application of the distance principle as embodied in the scale. First of all, the distance rates are to apply only to the class traffic, and a large number of the existing commodity rates will continue to operate, and even the class traffic of certain important descriptions will be excepted from the application of the distance scale in the case of interterritorial transportation. Secondly, the proposed scale of rates does not necessarily contain the actual rates to apply, but it only fixes the maximum interstate class rates. Thirdly, the rates are to apply only over the "standard lines" in certain areas in the Southern Territory, arbitraries to be added thereto for the other standard lines and for certain

tain short and weak lines. Fourthly, distances are to be computed at actual mileages over the shortest possible route between any two points, embracing as a maximum the lines or parts of lines of not more than three carriers for distances of 200 miles or less, four carriers for distances from 200 to 500 miles, and five carriers for greater distances. In this connection, certain constructive mileage is provided for. Fifthly, in the case of joint rail-water-rail class rates between interior points in the Eastern Territory and interior points in the Southern Territory, the class rates will be depressed to make "concurrence rates". Sixthly, the class rates between the Official Classification and the Southern Territories are generally to be based upon the "key rates". Sevently, in the case of through rates to and from certain areas outside of the Southern Territory, arbitraries may be added to the distance rates. Lastly, group relationships may be established to some extent.

From the above important exceptions, it will be seen that the proposed distance scale will in effect be applied to a small proportion of the entire traffic, and the more important traffic will not be greatly affected thereby. Moreover, the method proposed for the computation of distances will result, in the majority of cases, in the fictitious mileages, in view of the fact that the distances will be determined between two points on the basis of the shortest-route mileage between them, and that constructive mileage will be established. The addition of arbitraries to the rates for the benefit of certain lines will com-

pletely nullify the merit of the single scale system. At any rate, however, as in the case of the Central Freight Association Territory and the New England Freight Association Territory, the only advantage derivable from the proposed distance scale is the simplicity of the tariffs, which are, in the last analysis, prepared on the distance principle only so far as the form is concerned. The economic conditions in the South will not be affected to an appreciable extent by the introduction of the much-talked-about distance scale. The rate structures, which are based upon the operation of economic forces, will change entirely irrespective of the distance principle, according as the underlying economic forces change. As soon as transportation competition and market and industrial rivalry disappear or fairly well balance within the Territory, the rate system in that section of the country will automatically conform itself roughly to a distance scale. Any unnecessary interference from outside will only result in the disturbance of the commercial status, to the detriment of the interest of the carriers and the consequent impairment of the social benefit. However, the trend has culminated in the proposed Southern class rate distance scale.

In the case of the transcontinental rate systems, modified distance rate scales seem to have been proposed, and in many States distance scales of various types have been adopted, and the scope of the application is gradually being extended to cover wider areas and greater traffic, either in view of the changed economic conditions or the constant complaints from unfavorably located intermediate points. At each adjustment of both rates as a whole and individual rates, conformity more or less to the distance principle will be brought about.

C. PROBLEMS

A railway charge is not, as a matter of fact, arbitrarily made by a railway manager, but is the result of the interplay of the economic conditions which are largely beyond the control of the carrier. Instead of its being a human product, it is a necessary outgrowth of the various forces which have their own way irrespective of the abstract concept of railway charges. The popular idea is that a railway is highly liable to the abuses of its monopolistic position in the making of its charges to force upon the public. It could make any charge without regard to the notion of social justice, and exploit the public to whatever extent it pleases, hence the imperative necessity of subjecting it to rigid public regulation. Charges must be constructed on some logical and scientific basis, with a view to the protection of the public from being placed at the tender mercy of otherwise unscrupulous railways. Unreasonably heavy pressure would be arbitrarily brought to bear upon unprotected weak spots in order to accord a strong part of the public an unjustifiable favor. All these apprehensions seem to center around the idea that railways could otherwise promote their own interests at the expense of the public, and that they could possibly prosper no matter whether the public suffer. The interest of railways is entirely independent of the interest of the public whom they serve. Extreme as this statement may sound, the underlying motive, conscious or unconscious, of public regulation, which grows more rigid and strict as years go by, is undoubtedly based

on this idea, as evidenced by the evolution of the government regulation in this country and elsewhere. It still persists even in intenser degree in the minds of the public, as is plainly shown in the debate on the proposed amendment of Section 4 of the Interstate Commerce Act, referred to above.

However irregular and inconsistent the rate structures may seem, the existence of water competition, interrailway competition, and market rivalry have created the basing point situation in the South. The rate systems have been produced largely by these conditions for which the carriers were not responsible. The rivalry for business between the Eastern and Middlewestern markets on the one hand, and the struggle for traffic among the rail and water carriers on the other, resulted in the blanketing of rates over the two-thirds of the entire country, reaching even Denver, and the establishment of back-haul rates, for the westbound transcontinental traffic. The railways were forced to make such rates as to conform to what the economic conditions, under which they conducted their business, required. Wherever conditions differ, different charges are created, and, so long as economic factors operate in the making of rates and fares, relative equalities can never be realized. If exactly the same competitive conditions had prevailed in the Intermountain Territory as in the Pacific Coast, the rates therefor would have been graded in accordance with the distance principle, provided that all the other rate-making factors than the distance element were the same. Blanket rates, basing point rates, and all other "irregular and inconsistent" charges were not made

by the carriers through their voluntary actions. The carriers were as intelligent as the public, and they were fully aware of the fact that no good would come of a situation in which they purposely and maliciously placed the intermediate localities in an unfavorable position, thereby unnecessarily to incur their hostility.

The above contention, however, does not mean that the laissez-faire policy is always to be adhered to in the best interest of the public, and that railway charges ought to be free from any public interference in all cases. Where competitive forces work to an intense extent among the carriers, rivalry runs to the extremity among trade centres; industries are not balanced throughout a territory; population is not diffused evenly; and the carriers have surplus capacities for extra business; the carriers may, consciously or unconsciously, overstep the limit of reasonableness which is required by economic and social justice, in the instinctive desire for an additional amount of business. Personal considerations may creep in, resulting in gross discrimination which is altogether to be condemned. Charges may be made arbitrarily so as to enable the railways to participate in a harmful struggle for traffic, the result of which is the unnatural participation of markets in unreasonably long-distance business, the cross current of traffic and the waste of transportation. That was the case with the railroad situation of this country particularly prior to the activities of the state legislatures and the Interstate

Commerce Act in 1887, and these abuses may at any time occur, though to a lesser extent, against which some protection of the public must be provided.

To require the carriers to base their charges on the distance principle is undoubtedly one of the best measures available from the standpoint of public regulation. Complaints that arise constantly as to unreasonable discriminations will thereby be effectively removed or at least suppressed, apart from the question whether such complaints are justifiable or not in each individual case. The fundamental question, however, is whether the so-called distance principle is really a principle at all, based on facts and theories, and applicable without injustice and harm to all actual cases. This general question is resolved into several important questions: whether a distance scale is economically justifiable; whether it is socially beneficial; whether it proves a panacea for all complaints; if so, whether it permits of accurate and mathematical construction; and finally, though it may be a desperate policy instead of a practicable principle, how far it is applicable to the benefit of the public and the carriers alike.

With a view to throwing some light on the solution of these questions, the present thesis will include the discussion of the evolution of railway charges, the relation of the cost and value of service to charges, the controlling factors in the determination thereof, the resultant rate structures, the mecessary consequences of the application of distance scale

rates, the reasonable limits of such rates, and, finally, the trend of public regulation in this connection, with particular reference to the practices in the United States and Great Britain.

II. DISTANCE PRINCIPLE

A. UNDERLYING IDEAS

The underlying ideas, on which the principle is constructed to require railway rates and fares to conform more or less to the distance of haul, are very simple, and appeal quite readily to the general public.

First, a railway charge, if it is to be made so as to maintain equity, ought to be determined with strict reference to the amount of the service involved and the cost incurred in connection with the transportation of a particular unit of traffic. Shippers or passengers must pay compensations to the railway exactly in proportion to the amount of service they receive and the cost they incur in the utilization of the railway facilities, and the railway is entitled to just such compensations, social and economic justice condemning the charging of rates and fares which are more or less than determined by this standard. Undoubtedly, the ideas would hold good, and no one could question the validity thereof if only the cost of particular services not only were ascertainable with such accuracy as is reasonable for practical purposes, but also bore some definite relationships with the distance of haul, which would remain constant and applicable with fairness to any shipper or passenger utilizing the railway service under any conditions and circumstances at least at a given time.

Secondly, the cost of service ought continually to

increase with the distance of the transportation of particular units of traffic. They might not increase in exact proportion to the growth in distance, but they must have some definable connection therewith. To be valid in the light of social and economic justice, as claimed by the proponents of the distance principle, therefore, it must stand upon the above-mentioned two premises, that the cost of service is ascertainable as for each unit of traffic, and that it advances in amount as the distance increases in a definite manner.

The contention, built on these apparently plain, simple ideas as to the nature and character of railway costs, sustains the principle that each unit of the traffic to be carried ought to contribute towards the necessary total cost of the railway its share, which is determined by reference to the distance of haul, and which remains definite and constant. Such rates and fares only as are made on this basis are justifiable both economically and socially. The contention further holds that, although it may seem ultra-theoretical, it is practicable to ascertain costs in all cases, if only pains are not spared in the analysis of the railway costs with a view to bringing about mathematical regularity in the anomalous and inconsistent rate systems prevailing in most countries where the laissez-faire policy has been in practice to the detriment of the public interest. The earlier the public pressure is brought to bear upon the carriers to reconstruct their rate structures, which are obnoxious and repugnant to the conception of justice,

the fewer will the complaints be as to the disturbance of economic status and infringement upon vested property right of those unfavorably affected thereby.

B. DISTANCE TARIFFS

Starting upon the above-mentioned two apparently commendable ideas, commendable if they were applicable at all for practical purposes, the distance principle requires first of all the construction of a series of rates and fares upon each unit of traffic, or at least upon each of the several groups into which the entire traffic is divided for the sake of simplicity in the preparation of tariffs.

Insomuch, however, as the distance principle does not call for the uniformity of the per-mile rate to cover the entire distance of haul, there will result from it several different systems of rates and fares, according to the various manners in which some of the costs are distributed in allotment upon each unit or group of traffic for each progressive unit of distance.

1. Construction of Distance Rate Scale

By way of illustrating how the distance principle is supposed to operate in actual cases, a unit of traffic may be taken, upon which to construct a series of rates in accordance therewith.

First of all, the costs of a railway, covering not only the expenditures incurred in connection with its operation and maintenance, but also the amount necessary for the realization of a certain level of returns upon the investments in the

property, are to be allocated under two different heads: joint and additional. The joint costs include those items which do not permit of apportionment among the different services, but are related to the traffic as a whole, and the additional costs cover those items which are incidental to the conveyance of particular traffic, and which are, therefore, apportionable among different units of traffic.

This idea is, in the last analysis, that railway costs consist of two elements; one of which comprises such expenditures as are required in the transportation of the traffic as a whole, and the other covers such items of costs as accrue additionally in connection with the rendering of particular services and do not at all occur if these particular services are not rendered. The question, as to whether these costs do or do not keep a proportion to the volume of business carried out under varying conditions, must be kept totally out of sight in the consideration of the distance principle. In other words, the fact that they are constituted of constant and variable elements as well must be ignored, in order that a series of rates may be determined for each unit of traffic on the distance principle.

Secondly, the value of service is to be accurately ascertained as to each unit of traffic to be carried, for the purpose of determining its proper and equitable share in the joint costs. Costs must be divided between the freight and passenger services, and then subdivided among each of the units composing the total traffic of these two different categories, in accordance with the value of service determined for each of these

major groups. The joint costs are, of course, assumed to be the same per unit of traffic to be carried in the future as in the past, in spite of the possibility that traffic will vary in volume in the future without much affecting the joint costs as a whole. It goes without saying that the amount of joint costs is to be fixed on the basis of the past record under a certain volume of traffic that was actually handled. Therefore, the question, as to whether the share of each unit of traffic in the joint costs incurred in the transportation of traffic in the past, if they are distinguishable from the additional costs and apportionable among different units of traffic, remains the same and is equitable in the future when the total traffic may be carried in different volume, must be kept out of consideration in this connection.

Still another question is how the value of service is determined for each unit of business to be handled in the future, for the purpose of determining the apportionment of costs. Since the distance principle necessarily keeps out of consideration the controlling force of competition, either in respect of transportation or market, the value of service must logically be defined as the value of the place utility created as the result of the change of the location of commodities or persons through railway service, as represented by the difference in the prices on the original and new markets, or by the abstract benefit derived from the change of places, as the case may be.

It is practically, if not absolutely, impossible to

determine the value of service as defined above, in the face of the fact that, first, each commodity or each group of commodities is constantly subject to violent fluctuation in its market prices at different points without regard to the distance between the places of production and distribution or consumption; secondly, the determination of market prices is often influenced to a large extent by the railway charges themselves; and finally, it is absolutely impossible to express the value of service derived by passengers from transportation in terms of dollars and cents.

For all these difficulties, the value of service may be determined approximately for the practical purpose of apportioning the joint costs upon each group of traffic, as the proponents of the distance principle claim it possible, referring to one of the principles applicable in the case of classifying the different commodities into several groups. At least as regards the value of service to freight traffic, the levels of the average market prices at different places may in extraordinary cases be roughly ascertained for some commodities, but, unfortunately, the value thus determined does not remain constant, and, consequently, is of no use in the determination of the shares of such commodities in the joint costs for the purpose of making fair and equitable rates thereon, as required by the distance principle.

These insurmountable difficulties set aside for the time being, the distance principle may best be explained

graphically as follows:

A, B, C, D, E, F	Stations of dispatch
O	Station of arrival
Distance OE-TM	Utility of transportation service or value of service
Area OEPN	Terminal cost
Area NPM	Line haul cost
Area NP'V"R	Line haul cost
Area NPMH"'	Line haul cost
Area NPMZ	Line haul cost

In the construction of the above diagram, the terminal cost as represented by line NP, which is parallel to line OE, is assumed to be constant per unit of particular traffic under any conditions, and it must of course be borne by the traffic whenever it is handled at all. In addition to the terminal cost, each unit must also pay the cost incidental to its conveyance, which is assumed to bear a definite relationship to the length of haul as represented by straight line MN. The amount of cost covering the terminal and line-haul expenses, as represented by the distance between lines OE and NM, constitutes what is commonly termed the "out-of-pocket" cost.

It is hardly necessary to say that a railway does not undertake the transportation of any traffic for a rate under the additional or out-of-pocket cost, except under extraordinary circumstances, for instance in the special cases of developing some new industries in the hope of the future growth of profitable traffic, of carrying raw materials to facilitate the production of some high-grade commodities bearing relatively larger shares in the joint costs, or of the conscious or unconscious desire on the part of railway managers to struggle for business to an excessive extent. On normal occasions, it is not worth while for a railway to carry traffic at less than the additional cost. The minima of rates will, therefore, be AF, BG, CH, DV and EM for the traffic originating from stations A, B, C, D and E, respectively. Each rate, moreover, must more than cover the incidental cost, and contribute something towards the joint expenditure. In conformity to the economic theory, the joint cost

is to be apportioned with proper reference to the value which the traffic derives from the service. The total joint cost is first of all to be allotted to different units or at least different groups of traffic, in proportion to the respective value of service. The adherents of the distance principle claim that the apportionment of the joint cost according to the value of service is not so difficult as may be apprehended to be, for the relativities existing in the classification of commodities, which approximately represents the relative value of service to the different groups of traffic, are justifiably available in this connection. As regards the division of the joint cost between freight and passenger traffic, they offer no such theoretical ground as the above. The value of service to this particular traffic, however, is to be determined in any way for the purpose of proportionately apportioning the joint cost. It is represented by line TM, which constitutes the maximum limit, a rate above which would not permit the traffic to move.

The step to be taken next to the allotment of the joint cost to particular traffic is the further allotment of its share for each unit of the length of the haul of the traffic. According to the manner of the distribution thereof, several different systems are possible in the distance rate scale.

2. Equal Mileage System

One of the several methods available for the apportionment of the joint cost, assigned to the particular traffic, for each unit of the distance carried is to distribute it equally for any length on each unit of volume. The contribution towards

the joint cost allotted to this particular traffic will be the same in amount for a unit of traffic irrespective of whether it is dispatched to C from A, B, C or D, as represented by the distance by line NM and straight line RS. The ratio will, consequently, be AF', BG', CH' and DV''', for traffic dispatched from stations A, B, C and D, respectively. The commodity from stations farther than D cannot move to O, for the rates covering the distance between lines OE and RS exceed its value of service at station D outward, the line RS intersecting line TM at VIII.

The result of this method of equal distribution of the joint cost for each unit of distance is the equal mileage system of distance rate scales, where the per mile rate remains constant over any length of haul. Apparently, this system logically and theoretically conforms to what is required by the current notion of the social and economic justice, but, unfortunately, it is attended with insurmountable difficulty, which even the proponents of the distance principle admit, of narrowing the area open to transportation and killing the movement of the commodity otherwise possible.

3. Group System

To remove the difficulties and extend the field of transportation as far outward as possible, it is suggested that the joint cost apportioned to this particular traffic be distributed equally per mile or at least per block of some number of miles up to some point, and then taperingly per unit of distance. The distribution in this manner will result in broken line YH'''M, where the traffic from stations C and nearer is made to bear the share in the joint cost in equal parts, and the traffic

from the farther stations to contribute in lesser amounts as distance grows. The resultant rates will be AF'', BG'', CH''', DV'' and EM, from stations A, B, C, D and E, respectively. The shorter distance traffic will have to bear a relatively larger share in the joint cost than the longer distance traffic, in order to keep the rates on the latter lower than or at least the same as the value of service. The rates from O to C include therein a contribution in equal parts per unit of distance, and, therefore, they grow progressively in exact proportion to the increase in the distance of haul, while the ratio given to stations C and outward are blanketed on a level below or on the line of the value of service, the result being the rates becoming smaller in amount per unit of distance as the length of haul grows larger. The distribution line YH'''M intersects the out-of-pocket cost line at M, and the railway will not profitably participate in the movement of the traffic from a point farther than E.

The result of this manner of distribution is the group rate system, in the sense that the stations between C and E are blanketed in a single group with the same rate per unit of traffic irrespective of distance. This system conflicts not a little with the requirements of the distance principle, according to which the actual rates ought to be determined with close reference to the distance of conveyance, between the maximum set by the value of service and the minimum set by the additional expenses. The shorter-distance rates, growing with the increase

in distance to a more or less extent, may be defended in the light of social justice, although the burden of the joint cost is unproportionately greater per unit of distance than on the longer-distance rates, but the grouping of more distant stations is entirely repugnant to the principle, inasmuch as the longer-distance traffic is arbitrarily made to benefit at the expense of the shorter-distance traffic, which is entitled to an advantage in the matter of rates owing to its shorter length involved in the haul. There is no good reason why the points which are located favorably in respect of distance, should be deprived of their natural advantage to aid the geographically disadvantageous localities. Rates ought to be absolute, from an economic point of view, and must by no means be manipulated to counteract the situation created naturally by geographical positions. It is only too plain and clear that a nearer point should be given a lower charge than a more distant point, if considered from the standpoint of the distance principle.

The followers of the distance principle, however, do not always condemn the group rate system in toto; they cannot ignore the advantages over the equal mileage rate system which is logically to be upheld by the principle. First of all, the commodity can be made movable from such points as would otherwise be excluded from the field open to transportation. In the equal mileage rate scale, the outermost station for this traffic is D, the farther localities being denied the benefit of transportation, and market O is available only to the stations within the line DV'''. On the other hand, it is a fact that, however

repugnant the group rate system may be to the concept of justice, it extends the outermost limit farther up to EM, thereby creating traffic from points between lines DV''' and EM, which are altogether lost to the community within the confines of these lines in the case of equal mileage rate system. The proponents cannot shut their eyes to the fact that the localities between stations D and E will be provided with access to market O, and that the consequent creation of traffic, which serves to contribute toward the joint cost something, however small it may be, will that much lighten the burden on the otherwise limited traffic. A railway, if it is to continue its operation, must of necessity derive a certain level of revenue from the movement of its traffic, and the required cost is allotted, under any conditions, to the different groups of the traffic which it handles, though, as a matter of fact, cost must be adjusted to revenue in any competitive business. The greater the traffic in volume, the lesser the burden upon each unit thereof. It is problematical whether abstract social and economic justice contradicts the material benefits which the group rate system, undermining greatly the validity of the distance principle, affords both to the general public and to the carriers in the extension of transportation facilities to communities and the development of traffic, with the result of the ultimate reduction of railway charges on traffic. Whatever may be said against this group system, it must be admitted that it makes possible the maximum production of wealth and the retention of legitimate traffic.

Secondly, simplicity in rate structures must not be overlooked. It would make the tariffs quite complex if the rate structures were constructed on the rigid equal mileage system, where almost every station has its own rates fixed different from those applicable to other stations. It would be almost physically impossible for practical purposes to quote different rates for each station. Furthermore, the complexity in rate structures may prove a hot-bed of evils which most countries have struggled to exterminate, particularly in their early period of railway development.

The term "group system" or "blanket system" as employed in this relation must be distinguished in the meaning from that when it is used to denote the method of blanketing rates within an area without relationship to distance but primarily with regard to competitive or other considerations. The railway phrases are not at all definite, and the "group, blanket, and zone systems" may mean different things under different circumstances.

4. Tapering System

Social justice in the generally accepted sense can best be maintained in the rate structure built upon the equal mileage system, but it is inevitably attended with serious difficulties of economic character, and, on the other hand, the group system, while effective in removing these drawbacks and introducing many advantageous aspects from the economic point of view, does not closely conform to the principle of distance rate scales.

The compromise between these two extremes, to satisfy

the concept of fairness according to the prevailing notion of justice, is the distribution of the apportioned joint cost as evenly as practicable for each unit of distance. The distribution is to be as represented by dotted straight line ZM, thereby avoiding the difficulties of drawing the outermost line towards the nearer direction in the case of the equal mileage system, and, at the same time, obviating the criticism against the sharp breaking of the distribution line at H''' in the case of the group system. In the tapering system, the share of the traffic in the joint cost is to be determined so that it may fall on each unit of distance of haul lighter in a very gradual manner as it progresses, without, on the one hand, a proportionate increase in the total charge throughout the entire length of haul, and without, on the other, an undue increase in the total charge on the nearer part of the entire distance of haul with the horizontal level of the total charge on the remaining part thereof. In other words, the allotment of the joint cost will grow almost imperceptibly smaller for each unit of distance as it increases, the result of which is that the per distance-unit contribution shrinks smoothly as the distance advances, and, consequently, the rates or the aggregate charges covering the additional expenses and the shares in the joint cost, diminish per unit of distance according as the length of haul increases.

The distance between lines OE and ZM, representing the rates, grows gradually larger towards the outer stations, but dotted straight line ZM does not run parallel to line NM, or line RS, which is drawn in exact proportion to the growth of distance.

Instead, the rise of the line gradually grows less as it approaches M, starting at a point on line OT between R and Y, and intersecting the value of service line at M, the same point as for broken line YH'''M.

The manner of the distribution of the joint cost among the different units of distance, as required by the tapering system, is theoretically contrary to the current idea of justice inasmuch as the shorter-distance traffic is compelled to bear a larger share, however gradually and slightly, than the longer-distance traffic, as the former is made to bear a share which is out of proportion to distance. The adherents of the distance principle, however, do not regard the principle as sacred in all cases, and seem to accept this system as the most consistent one practicable, the logical discrepancy being more than offset by the advantages derived therefrom. It has been, no doubt, the controlling idea in the recent attempts to reconstruct the apparently irregular rate structures of the country. The adoption of the equal mileage system in the passenger fares of this country seems to have been entirely due to the fact that the revenue from the passenger traffic is negligible as compared with that from the freight traffic, and that the average income of the passengers is so large that an elaborate fare system is not a question of such importance as speed, luxury and comfort. The democratic idea in respect of the individual social standing may also account for it to some extent.

A little modified form of this system may be suggested, which is calculated to attain the same result as the above sys-

tem in a much more effective way, and yet is as readily defensible as it is from the standpoint of the distance principle. If the distribution of the joint cost, as indicated by straight line ZM, is conceded as practical in the application of the principle to actual cases with due reference to the requirements of the principle itself and to the benefits of the public and the carriers alike, there must be no good economic reason why line ZM should always remain straight. It might be curved, so that the nearer traffic might be made to share in the joint cost a little more than in the case of a straight-line distribution, in order further to lighten the burden upon the more distant traffic. The former traffic leaves an ample margin up to its value of service, and is able to bear a larger contribution, whereas the latter is taxed nearly to the utmost of its ability. The smaller the area between lines ZM and TM for the nearer traffic the farther will the outermost limit of transportation field be pushed back, as in the case of the group rate system. The result will be the increase in traffic and the consequent decrease in the per unit burden of the joint cost. This modified tapering system is again the compromise between the strict tapering system and the group system, in the sense that the line of distribution runs in a curve between straight line ZM and sharply broken line YH'''M, thereby avoiding the objectionable feature of the remarkable inequality in distribution, and enhancing the advantages of the strict tapering system. However, if once a step is taken in deviation from the straight-line tapering system, the difference between the group rate system,

inconsistent with the distance principle and the tapering rate system, which is already a great concession, will cease to be a question of principles, but will become a matter of compromise. A step towards the group system will mean by that much the acknowledgment of disadvantages on the part of the distance principle. Generally speaking, the farther the system is from the distance principle, the greater will the benefit be. To defend the distance principle, a limit must be provided somewhere between these two systems. On the whole, the tapering system in which distribution is made on a straight line seems fully to satisfy the current notion of justice.

C. Extent of Diminution of Per-Mile Rates

Where the tapering system is adopted in the making of rates and fares, whether in its strict or compromised form, the determination of the degree in the gradual and progressive diminution of the per-mile or other per-distance-unit rates constitutes a question for settlement. According to the contention for the distance principle, it permits of a scientific approach, instead of an arbitrary and indefensible method.

As preliminary measures, the terminal cost, the line-haul cost, the value of service, and the required amount of the contribution towards the joint cost are to be fixed, with as much precision as practicable, for unit of each particular traffic. Line NP is drawn on the determination of the actual expenses incurred particularly in connection with the handling thereof at both terminals. It is after all simply a question of some painstaking work involving the detailed analysis of the

relevant expenses at terminals, and there have been a number of cases where the terminal costs were actually determined for several different commodities for this specific purpose. The line-haul cost increases per unit in simple progression as the distance of haul grows, and the careful analysis of the constituent items thereof will determine line NM. A concession, however, is made in this theory when it is applied to actual cases, as will be shown later. Line TM does not present much difficulty to be drawn, for the service utility can be fairly accurately ascertained by experiments or from past experiences. Common sense is one of the important factors in the determination of the value of service for the particular traffic. Area ZMN, the amount of the total contribution which this particular traffic as a whole is called upon to make towards the aggregate joint cost, is determinable on the basis of some of the considerations which are used in the classification of commodities. The aggregate joint cost will be apportioned to each group of the traffic, in accordance with what it will bear, and also with due regard to its average length of haul. The proportion in which the coal, silk, etc., are to contribute their respective shares, will thus be decided with a fair degree of equity.

Since lines NP and NM have been drawn to serve as a minimum below which a rate is not possible, and line TM has also been determined to fix the maximum above which a rate cannot rise the remaining question is how line ZM is to be drawn between lines NM and TM. It goes without saying that the line must

start somewhere on line OT and meet line NM somewhere before it intersects line TM. Where to begin and where to end constitute the central problem. It is held that it is not so hopeless a task as it may appear to be to fix points Z and M. First of all, in the determination of point Z, past experiences must be made the basis, on which it is to be placed somewhere along line OT, so that the rate from the nearest station may be made to bear the greatest contribution towards the joint cost and yet not seem to be extortionate from the standpoint of reasonableness. If, in the light of the past experience, the terminal cost of handling a ton of coal is 5 cents, the line-haul cost 0.2 cent per ton mile, with the value of service fixed at two dollars, and the charge of 10 cents per ton thereof will be accepted as reasonable for its movement within the initial mile or block of a few miles, then point Z is to be determined at 10 cents on line OT, the rate yielding 4.8 cents toward the joint cost per ton for the first unit of distance. Point M must, of course, be the same as the point where line NM reaches line TM, for the simple reason that the additional cost line exceeding the value of service line at M, the particular commodity cannot be moved to O from outside of line EM, and there is no spreading the joint cost over line ZM farther than M.

As regards the distribution of the joint cost on the intermediate traffic, it is to be determined by drawing a straight line connection already known points Z and M, the result whereof will be the space between this line and line NM becoming narrower as the distance from O increases towards line

ZM; in other words, the total charge to be levied upon a unit of this particular traffic diminishing per unit of distance as the length of haul grows larger.

Next, the applicability of this line ZM must be put to a test, so that the area formed by space ZMN may exactly cover the portion of the aggregate joint cost which is allotted to this traffic in question as a whole. It is, as a matter of fact, comparatively an easy task to estimate the revenue possible from the proposed rates on a given amount of some important, if not all, particular traffic, since the ratios of the volume of each of these groups of traffic traveling over each successive mileage are accurately ascertainable from the past records - for instance, 5 for the coal traffic traveling 10 miles; 10 for 50 miles; 15 for 100 miles; 35 for 150 miles; 30 for 200 miles; 10 for 250 miles; 5 for 300 miles; and so forth - probably in more minutely divided units of mileage. The estimate of the tonnage of each group of traffic for the forthcoming year or other units of fiscal period will be made, in most cases, by means of the least square calculation. The volume of traffic thus ascertained will be spread over the different units of distance according to the above-mentioned ratios, and the total revenue from this traffic as a whole will be estimated by the computation of the tonnage against the rate determined for each unit of distance. From this estimated revenue will be deducted the cost covered by the terminal and line-haul expenses, and the result thereof will be compared with the apportioned joint cost. Point Z will be shifted up or down on line OT ac-

cording as the result obtained in the above manner more or less than covers area ZMN. In cases where the contribution towards the joint cost, yielded by the rates established along the line ZM, falls short of the predetermined apportionment thereof and point Z cannot be moved upward sufficiently to increase the contribution up to the required amount by reason of the resultant rates being generally regarded as unreasonably extortionate for the nearer traffic, the apportionment of the joint cost to this particular group of traffic has to be adjusted accordingly. As M. O. Lorenz puts it in the Constant and Variable Railroad Expenditures and Distance Tariffs in Vol. XXI of the Quarterly Journal of Economics, "All of this may seem ultra-theoretical, but, if the reasoning is accepted, the practical application is not complex." However, whether it is so simple in the actual case as is maintained remains yet to be examined.

As regards the modified form of the tapering rate system, there are two different methods to be suggested. One of these is to draw line ZM connecting all the intermediate points which will be determined independently of point Z, in the similar manner. On the bases of the past experiences and the general notion of reasonableness, as in the case of the original determination of point Z, points are to be located somewhere on lines representing stations A, B, C and D, respectively, and a line is drawn from the initial point Z to the final point M, connecting all these intermediate points on its way. The line thus traced may very nearly be a straight line, or may be a more or less zig-zag line. The other method is to

draw a line from the determined point Z to point M arbitrarily in curvature instead of straight, with a view to relieving the more distant traffic of its burden to a greater extent, so that the outermost station line may be farther pushed back, a portion of the additional expenses to be merged into the joint cost, or, where there is no necessity of extending the field of transportation by means thereof because of the actual market conditions or operation conditions, the movement of the more distant traffic may be facilitated on a reduced level of rates.

In the tapering rate system, the total charges, that a unit of any traffic is required to pay under any circumstances must continually increase, but the charges thereon per mile or other per-distance unit must consecutively decrease with the growth of distance, through the tapering distribution of the joint cost, in which the imposition thereof diminishes gradually upon a unit of traffic as distance increases till it becomes zero at point M. However, even in the case of strict adherence to the distance principle and the equal distribution of the joint cost upon the unit of traffic throughout the entire distance, as required in the principle, still the result will be a mild form of tapering rates, because the following fraction decreases as mileage grows:

$$\frac{JM \quad T \quad HM}{M}$$

J ;.... Joint cost equally distributed upon a unit of traffic per mile.

T .... Terminal cost per unit of traffic

H .... Line-haul cost per mile per unit of traffic

M .... Mileage

In the above fraction, as M increases in quantity, the result representing the rate at any given point per unit will diminish, since J, T and H remain constant under any conditions. In this case, however, the diminution will be very slight, for the only factor that causes the diminution is T, and, therefore, it seems to be regarded even by the sponsors of the distance principle as not sufficient in the actual cases to avoid the restriction of the area over which commodities, particularly low-grade, can be transported.

In all the actual cases where the rate structures are built upon the tapering system, a number of departures in diverse forms from the above-mentioned requirements of the theory are forced to be taken, and the result thereof is in effect that the distance tariffs remain rather in name than in reality, which will be discussed in detail later.

D. Assumptions in Principle

The distance principle is based on several assumptions of grave importance, and, if these assumptions cannot be satisfactorily proved valid in the light of both theory and practice, the principle will totally fail for practical purposes, however commendable it may seem from the standpoint of the social and economic justice.

From the manner in which the distance principle operates in the construction of actual rates and fares, it may be conjectured that there are various assumptions or hypotheses, which are indispensable to uphold the validity of the principle.

First of all, therefore, analysis will be made of these bases to find out if they are in reality supportable, at least for practical purposes, and then facts will be presented as to the application of the principle to actual cases.

1. Cost of service

In the building up of a series of rates and fares, according to the distance principle, it must first be assumed that the terminal cost and the line-haul cost are determinable on the basis of the past performances, for the purpose of fixing the charges on the units of particular traffic applicable universally within a certain area, and then the next assumption is that the joint cost is allotable among the different groups of traffic in equitable proportions.

As a matter of fact, however, the majority of the constituent items of the terminal and line-haul costs are joint, in the sense that they are produced as the result of handling the traffic as a whole, instead of the consequence of rendering services in connection with particular traffic. It may, theoretically, seem that these costs are very simply separable from the joint cost, but it is in part an absolute impossibility. How could the terminal cost of 100 pounds of cotton be ascertained against that of 100 pounds of lumber? If, however, it were ascertained for each unit of the different groups of traffic handled at certain stations, after a laborious task, and the result satisfactorily met the actual additional expenses incurred in such stations, could it be applied to the cases of other stations with equal force? Undoubtedly it could not;

for instance, labor specially expended in the handling of a ton of lumber at one station costs more or less than at another terminal according to the facilities thereof - it may cost 2 cents at one station while at another it requires 5 cents due to the absence of mechanical appliances and the necessity of more manual work. The terminal cost is incurred largely in connection with the handling of traffic as a whole, and is not by any means uniform per unit of handling at all terminals. Furthermore, the cost determined on the basis of the past records will be greatly different from the cost that will be incurred per unit in the handling of particular traffic even of the same volume. Prearranged cost allotments do not apply to the future traffic. The impossibility of segregating the total cost into joint and additional; the differences in the terminal cost, if it were ascertainable at all, per unit of traffic according to different terminals at different times; and the difficulty of allocating the cost to each group of traffic handled make it absolutely hopeless to determine the terminal cost for each handling, as required in the construction of the distance principle.

The same difficulty attends the attempt at the ascertainment of the line-haul cost for each unit of different traffic handled. Every item of the expenses incurred in the conveyance of traffic is more or less interrelated to other items, and it is practically impossible to determine the limit of the line-haul cost. If it were segregated, as in the case of the terminal charges, the question would be how to ascer-

tain the cost of carrying a ton of coal respectively over 5, 10, 50, 75, 100 miles and so on, as against a ton of timber. Even if it were ascertained on the past experiences by allotting the total line-haul expenses to each group of traffic according to its relative risk involved, regularity of movement, space occupied, value of service, and all other factors, and spreading it evenly on the entire length of the haul of each traffic, it no doubt varies according to the time, the lines and the directions thereof. These difficulties may be arbitrarily overcome by taking an average over a certain period of time and over different lines and directions concerned, or providing arbitraries or constructive mileage (bonus mileage in Great Britain; traffic mileage in Japan) for certain sections or lines, but the risk of inviting severe criticism against a favor being given to a group at the expense of another must be run, contrary to the requirement of the distance principle. There is certainly no reason why the rate should be required to cover the average hauling cost for the movement of traffic, for which empty cars are available and which will be impossible if the full rate is imposed. The line-haul cost will be affected only very little if these empty cars are utilized, and whatever such traffic leaves above its out-of-pocket expenses will so much relieve the regular traffic of its burden.

As regards the assumption regarding the joint cost, an altogether arbitrary line of demarcation must be drawn between the joint cost and the additional expenditures, as has been revealed in the course of the above discussion, and, more-

over, the apportionment thereof to each group of traffic and then the spreading of it on each unit of distance of haul defy all the mathematical analysis as claimed by the proponents of the distance principle. The American railways of Class I have been required by the Interstate Commerce Commission to report their cost actually incurred under three heads, joint and additional, the latter being sub-divided between freight and passenger, but the segregation is entirely arbitrary, as will be discussed later.

The cost must necessarily be ascertained per unit of traffic and per unit of distance, as required by the distance principle for its application, no matter whether in an arbitrary and indefensible manner or not. The bases, on which the cost ascertainment will be effected, are of course the actual figures obtained in connection with the traffic that was carried in the past. The assumption here is that the cost once ascertained on the basis of a given amount of business holds good and remains constant irrespective of the increase or decrease in the business to be handled. In the examination of this assumption, the question of increasing returns or decreasing cost will arise. Facts are too plain to allow anyone to doubt that the railway operation is subject to a great extent to the economic law of increasing returns, in that the cost decreases and, conversely, the returns increase, as the traffic grows up to a certain point, where the existing capacity is utilized to the maximum and, consequently, the expenditures rise abruptly.

The growth of traffic as far as the existing facilities are capable of handling will not affect the greater portion of the aggregate cost of a railway. It is beyond possibility to determine the portion of the cost which remains constant or at least does not vary proportionately with the volume of traffic and that which varies directly with it, with mathematical precision, but it is universally agreed that 70 to 75 per cent thereof constitutes the constant element and only 30 to 25 per cent the variable element. The joint and additional costs do not necessarily correspond with the constant and variable costs, respectively, but some of the items composing the joint cost may vary with the growth or shrinkage of traffic, and there may be some items in the additional cost which are not variable in the least, or are variable very indirectly with the increase and decrease in traffic. It entirely depends upon the conditions and circumstances under which particular business is carried out. The same amount, or 150 per cent, of labor cost may in most cases prove sufficient to load or unload a commodity of twice the volume at a terminal, and the same is applicable to the line-haul cost. The administration cost may be reduced by one-third for the handling of traffic the volume of which has been decreased to a half, by reason of the total elimination of some of the items composing the entire cost. Efficiency is another factor that affects the cost to a great extent, for it makes possible the intenser operation of the facilities.

The law of diminishing cost ceases to operate when

the traffic outgrows the available facilities of transportation, and railways are, therefore, required to expand their facilities by leaps and bounds at some intervals. How to spread these expenditures, either over one year or over a series of some number of years, constitutes another question.

The following table, covering the index numbers of some of the important factors affecting the relationships between the traffic and the cost, may serve in a way to throw some light on the trend in the American railways.

	Ton Miles	Passenger Miles	Maintenance of Way and Structures	Maintenance of Equipment	Transportation
1895	100.0	100.0	100.0	100.0	100.0
1900	166.1	131.5	150.4	164.2	138.9
1904	204.0	179.8	194.8	250.7	188.6
			- - - - - - - - -		
1901	100.0	100.0	100.0	100.0	100.0
1905	126.5	121.7	119.0	151.6	136.5
1910	175.5	160.0	159.7	214.7	161.3
1915	195.9	160.7	165.4	268.4	182.7
1920	279.6	206.4	456.3	849.4	521.9
1923	231.9	165.1	320.8	665.2	381.1

The figures in the above table are not at all complete, since the index numbers of the costs cover the expansion of the facilities at the actual costs prevailing in the respective periods instead of being weighted by computing them at the levels of costs in the basic years of 1895 and 1901. For the purpose of the comparison of the volume of traffic against the

costs, the latter should have been stripped of the influence of the market prices. The labor prices, which undoubtedly constituted by far the greater portion of the respective costs, and the prices of the materials made a great rise per unit during the period under review, and, consequently, the same amount of labor employed and the same quality of materials used were charged progressively greater as the years advanced. However, the same table will give some idea as to the relation between the traffic and the immediate cost of the handling thereof.

The distance principle, in its application, entirely loses sight of the fact that the railway costs are made up of the constant and variable elements, as well as the joint and additional items. The cost, if it is ascertained with at least such accuracy and precision as are reasonably practicable, is at most the cost as of the traffic that was actually carried in the past, and, therefore, is not of avail for rate-making purposes for the future traffic, except in a very remote manner from that which the distance principle originally required. From the theoretical point of view, it may be held that the volume of future traffic can be fairly accurately estimated by means of the least square, and then the rates, determined on the basis of the joint and additional cost system, can be adjusted accordingly to fit in with the concept of justice and the requirements of the railways. If it is possible, it is all very well and good, and nothing remains to be said about it,

but the fact is that there remain still greater difficulties to overcome.

Assuming that the cost of each particular service were ascertainable with some approach to accuracy, and further that the future volume of traffic were estimable with a fair degree of precision, so that charges may be determined equitably on the cost basis, the next question is whether cost has a definite relationship with distance. The distance principle depends for its validity upon either the cost basis, or the service basis, and, therefore, if the cost of service does not vary with the length of haul, or if the determination of charges according to the amount of service as measured by the length of haul is not in the interest of the carriers and the industry and commerce, the distance principle will fail altogether to function as a basis upon which to build an equitable and just rate system.

It is true, and admits of no doubt, that the cost of service does vary with the distance of carriage, but this rule applies only to a very limited and specific extent. The cost of hauling one ton of coal 50 miles is undoubtedly less than the cost of hauling that one and same shipment 100 miles, although it is decidedly more than one-half of the cost of the latter service. Some, if not mathematical, relationship exists between the cost of service and the mileage of haul in the above case. However, it must be noted that this will take place only where the original destination of the shipment is changed while

in transit to another point. In other words, cost increases in some proportion to distance, only under exactly the same conditions and circumstances: in no other case has cost any reference to distance. And in actual railway operation, there are very few occasions where transportation service is rendered under exactly the same conditions and circumstances, but each shipment is carried under a different condition. It goes without saying that a shipment of one ton of coal 100 miles may cost substantially less than another shipment of one tons of coal carried simultaneously over the same section. It all depends upon the availability of the capacity of station, train, and car facilities. A shipment of 10 tons of shoes is consigned for carriage from A to B, and a car is supplied for it. Before it is dispatched, however, another shipment of 10 tons of shoes happens to turn in to be carried also from A to B, and the capacity of the car, which was specially called for the conveyance of the former consignment, is found to be available also for the latter shipment. In this case, the cost of service for the second shipment will be quite nominal, in spite of the fact that it is handled and moved at the same time, at the same stations, on the same car and train, over the same section. That cost has nothing to do with distance is very clearly demonstrated particularly in the case of utilizing the movement of empty cars. Almost nominal increase in the billing and other clerical cost and in the handling expenses at both terminals will be sufficient for the conveyance of traffic

on empty cars. The flow of empty cars, of ordinary and special types, is inevitable in the operation of any railway.

The distance principle is not at all tenable, because the cost of each service is not ascertainable either for the traffic that has been carried or for the traffic that will be carried, and because, if it were determinable, it would have absolutely nothing to do with the distance of haul in the majority of actual cases. The distance principle fails in validity, but, nevertheless, it might be accepted if it proved advisable in the interest of the public and carriers. It may be supported on the basis of the contention that individual charges ought to be determined according to the amount of service rendered for the particular traffic, which is measured by the distance of haul. The charges thus fixed may be equitable abstractly, if they are not detrimental to the retention of the present traffic, and the protection of the potentiality of the future development of traffic, so that the greatest exchange of commodities and persons may be insured. This question will be discussed in detail later.

3. Value of Service.

The next important assumption, on which rests the distance principle, is that the value of service is determinable for each group of traffic with practical precision, the joint cost to be apportioned on it proportionately according to its value of service, as measured by the difference in its market prices. In the elucidation of the principle, it is pointed out that the task of ascertaining the value of service for the

different groups of traffic is not so complicated as it is expected to be. Some few of the more important commodities will be singled out of each of the groups, and the average costs of production thereof has simply to be compared with the average prices on the market. The differences are no other than the values of service which these commodities are to derive respectively from their movements from place to place, and the value thus determined for these particular traffics will be fairly applicable to other commodities within the same groups. The cost of the production of a ton of coal is fixed at 5 dollars on the average, including all the expenditures involved in production and the reasonable profit on it; the market price averages about 8 dollars, and then the value of service to the coal will of course be 3 dollars. All the other commodities classified into the same group will be rated at 3 dollars, and the aggregate joint cost will be apportioned to this group in proportion thereto. The result is the equitable allotment of it, and there is no other method possible which can justifiably be applied to the apportionment of the joint cost.

As has already been pointed out in the preceding discussion, the complexity with which this task is attended in spite of the theory advanced by the proponents, actually defies the accomplishment of it. First, the costs of production and prices on the market fluctuate violently so that the averages taken do not count very much in the fair and just ascertainment of the value of service. The value of service, or place utility, is at the most a theoretical abstract notion as to the potential difference in the value of a thing due to the change of the

localities thereof. Since the relative value of a commodity does not remain constant, there is no way of expressing the place utility in terms of dollars and cents, which is applicable to the determination of some standard of more or less permanent nature. Moreover, the commodities of the same descriptions or of the same groups in classification which are carried by railroads, are produced at a number of different places for movement, sometimes parallel and often crosswise. It is absolutely impossible to ascertain the average costs and prices with the precision which the distance principle demands.

Even if the average is taken of the costs and prices over a certain period of time, it is not by any means applicable in the attempt to fix equitable rates on commodities to be carried in the future. The costs and prices may rise and fall for above and below the average determined, and the value of service may vary considerably from that on which the rates have been fixed. Where the value of service soars above the average, the rates will be unduly low and the traffic carried at these rates is moved at the expense of the other commiditities, or to the exploitation of the railway interests. Conversely, where it falls below the average, the rates will prove unreasonably extortionate, to the detriment of the development of the industry and the consequent shrinkage of the railway revenues. Of course, it may be avoided to some extent, so that justice may be maintained as far as possible, if the rates are adjusted very frequently from time to time, but the difficulty lies in this connection in the fact that the costs and prices

of a commodity do not always fluctuate simultaneously in the same proportion; they do not rise and fall uniformly for all the groups of traffic; and lastly, it is far from being desirable and beneficial, from the standpoint of justice and practice, to make changes in the rate systems at frequent intervals, not to say of the changes in some particular series of rates to the disturbance of their relationships with the other rates. In other words, if the adjustment of the rates, both particular and general, to the always changing value of service were possible, it would no doubt be undesirable and impractical. What the public really requires is not the constant fluctuation in the rates and other charges, simply for the sake of conforming them to the abstract concept of the social justice, but a stable rate system, no matter how it is constructed, which permits of the free flow of traffic and yields a fair profit to the carriers. The rates which are demanded by the distance principle do not always meet the real requirements of the economic communities at large. It does not necessarily mean that the economic requirements conflict with the social justice, but economic justice is fundamentally identical with social justice, and, wherever there appears a conflict between them, some fallacy has crept into the notion of the latter. Economic factors have, after all, to have their own way, and only when they are interfered with in their free operation is social justice impaired, and the evils consequent upon such interference ought to be removed through public pressure.

Another difficulty encountered is, as discussed before, that the railway charges often prove a controlling factor in the determination of the costs and prices of commodities. Raw materials are not always obtainable at the points of the production of finished articles, but, in the majority of cases, they are hauled from elsewhere, paying more or less charges for their movements. A number of different materials may be required for products of a single description, each bearing a railway rate. Costs of production are, therefore, affected to a great extent by railway charges themselves. Again as regards market-prices, there are readily available an endless number of actual instances where railway charges from the point of production to markets control prices to a great extent. Wherever the production of particular commodities is monopolized artificially or naturally, their market prices usually vary in some porportion to the railway charges to the markets on which they are put. In the artificial or natural monopoly of production, the cost incurred in connection with the movements of the raw materials and products constitutes an important factor in the fixing of the prices thereof. Not only in the case of monopolized production, but also in production subject to competition, railway charges influence the market prices to a greater or less extent. To determine the value of service for the purpose of fixing railway charges is, therefore, quite preposterous. If the value of service is a factor in rate making, it is of some service only in respect of determing very roughly the relative ability of each commodity or group of commodities to bear railway charges. It is not at

all applicable in the actual making of particular rates.

In all the discussion of this matter, it must be kept in mind that the value of service is the value to be determined with reference to the difference in the prices of commodities according as they are moved from one place to another. In the current use of the term, a different significance is often attached, where it is employed in the making of rates in a broad sense, with the controlling influence of competition taken into account in the determination of the value of service.

3. Competition

As put by Lorenz, referred to above, who is undoubtedly one of the outstanding spokesmen for distance rates, in connection with his very elaborate and theoretical discussion of the distance principle, the construction thereof rests upon the assumption "that the competition .... has been eliminated." The most important of all the tests of the validity of the principle is whether the railway business has been liberated from competition, or at least whether there is a prospect discernible of the railway operation free of competition. In other words, if a railway will be placed in a situation where its charges can be fixed satisfactorily both to itself and the public with reference to the factors which have been discussed above, is the central question bearing upon the validity of the distance principle. If the rates constructed according to the distance principle work in such a manner as to allow the traffic to flow as smoothly and freely as under any other rate system, the distance

principle is certainly more equitable and justifiable than the other principles governing the determination of railway charges, if not absolutely the best.

No doubt, in the total absence of competition in the railway business, rates and other charges could be made tolerably nearly on the basis of distance, to a reasonable degree of satisfaction to the public and the carriers. If completely kept aloof from the exigencies of competition, the factors of the terminal, hauling and joint costs and the value of service might necessarily create the rates which invariably increase in a straight or tapering manner as distance grows, and as much traffic as will naturally come would come to the carrier sitting comfortably with his arms folded. Commodities and passengers would travel as they will naturally travel, at rates and fares "logically and theoretically" made. No one would have any occasion to complain, everyone would be satisfied, and a utopian condition would be created in the railway situation. So much the better both for the carriers and the public alike.

The reality, however, unfortunately presents a completely different aspect. The situation is imaginable where entire transportation, rail, water, road and even air, is operated by a single carrier, and there is absolutely no competition for traffic otherwise existing among carriers engaged in different services. In other words, transportation is conducted under complete monopoly as to carriers, within a country or at least within a territory. Even in such a case as this, the transportation business is still subject to carrier competition in re-

spect of the international or interterritorial traffic, so long as it is not completely shut out from the outside, and does not remain self-sufficient. To attract the raw materials to flow in and facilitate the products thereof to move out, thereby to develop its own industry and trade satisfactorily in competition with the outside, import and export rates, exceptional rates, abnormal rates, or under whatever names they are called, will have to be made in departure from its theoretically constructed regular scales.

In point of fact, any such condition under which the transportation business of a country or a territory is conducted under complete monopoly is never heard of in modern civilized communities. Even in the countries where railways are nationalized, it is usually only the principal railways that are operated by the states, the local and other less important lines being left for private operation, and, therefore, they are subject more or less to rail, as well as water, competition. Moreover, in such countries as adhere strictly to private operation, the public regulations are so framed as to encourage the healthy and legitimate competition between rail carriers and also between rail and water carriers, although the recent trend is generally that the time-honored laissez-faire policy is being discarded and instead public pressure brought to bear with a view to the regulation of transportation rivalry.

There is still another form of competition from which any railway, no matter whether it enjoys, if not complete, at least partial, monopoly, can by no means be free. It is market

competition, which is entirely beyond the control of either the carriers or the states. Whether they desire or not, market competition operates according as economic forces work in production and distribution. Market tends to expand, and whenever it encounters an obstacle in its way it struggles for expansion as long as there is a possibility thereof. The value of service will be virtually lowered, and the rates forced to be depressed accordingly. Otherwise, the result will be simply to bar the market from expansion and kill the possibility of the development of the railway traffic. The public will suffer from the limitation of market and the eventual increase in the railway rates on the traffic.

Wherever it is possible for two or more points of production to participate in the business on a single market, the railway charges concerned will automatically be adjusted so as to equalize these points; they are not adjusted by the carriers but are forced by the influence of competition working on the relative situation of these points, and they are by no means responsible for the equalization. Unless the costs of production are identical and the distances of haul are the same, the unfavorably situated point of production will necessarily have to retire from the market. This force of competition operates in the making of the rates, even if these points are served by a single railway system, and, in the case of different carriers serving them, the competitive force operates all the more intensively on the equalization of the rates. These points are

not confined to points of production, but exactly the same situation will take place in the competition among different jobbing and other trading centres for business on the same market.

Similar to, but a little different from, the above-mentioned situation is the situation prevailing among different rival centres of business, such as ports, etc., particularly where they are served by different carriers, although it may take place also in the case of a single carrier serving them generally in a less mild manner. The markets for which these centres intend may be entirely different, but the competition among them for business expansion, coupled by the competition among the carriers for traffic to move on their own lines will force their rates to fit in with the requirements created by the situation. The result on the rate system is inevitably equalization, irrespective of the distance to reach these points.

Whatever forms competition may take, where there is competition, the rates and other railway charges have to be adjusted to meet it, because of the economic law that no two different prices can obtain in the long run at competitive points for similar commodities or services. Railway charges have to be made without reference to distance simply because the economic law is to be conformed to. If charges at competitive points are on a lower level than those at intermediate points, the economic forces alone that compel the depression are held to be responsible for what is condemned in the light of the distance principle.

There is another type of competition which may be called industrial, that effects railway charges. To aid an industry or a locality in the infancy of development so that it may successfully force its way into market which has been already served by well-established industries or it may be more thickly populated sections, the railway rates or fares are justifiably made, from the standpoint of the public and the carriers' future interest, to serve the purpose, and such charges must of necessity be determined without regard to distance to place it on equal terms with its competitors. If distance rates are strictly adhered to, it will not be developed at all, or at least will only develop much more slowly than otherwise, and no one will benefit thereby. They will tend to encourage the concentration of industry and population, instead of the diffusion thereof.

It is hardly necessary to discuss the advisability of depressing rates and fares for some special purposes, such as social, industrial, educational, etc., or for some transportation purposes, further than what has already been elsewhere discussed. Depression for the former purposes prevails extensively where railways are not operated chiefly from a commercial standpoint, but charges are made in consideration of national policies as well as economic requirements. Cases of permanent nature are very rare in countries where the private operation of railways is adopted. Departures from the distance principle for the latter purposes are in most cases of temporary

and emergency nature, to relieve some particular lines or points of congrestion or facilitate the movement of traffic to meet some other particular situations.

E. Limitations in Application

The above discussions logically lead to the question as to the point up to which the distance principle, if it should be introduced at all, can be allowed to operate without inflicting much damage upon the economic and social conditions. It has been made clear that a line can never be definitely drawn between the joint and additional costs; that, if it were possible, there is no accurately apportioning them upon different units of traffic; and that the value of service does not permit of a satisfactory ascertainment for the purpose of the equitable assessment of the joint cost. Further, even if they were possible to a more or less extent so that rates might be determined on those bases with a tolerable degree of justice, they would by no means be applicable to the traffic that will be carried in the future, because of the fact that these costs are also composed of the constant and variable elements and that the value of service is subject to violent fluctuation. In addition, the value of service is greatly affected by the force of competition. Apart from the influence exerted by competition, the distance rates may fairly well be applied to the satisfaction of probably the majority of people, in spite of many inconsistencies and irregularities in the rate systems based thereon. The various difficulties met in the ascertainment and apportionment of the cost and the value of service may be, though arbitrarily, dis-

posed of in some manner or other, and the inconveniences to be felt here and there may be more than offset by the results which are beneficial on the whole. The variability of the railway cost and value of service according to different conditions and circumstance, under which traffic is carried, as regards the time of conveyance, the lines and even directions of haul, and the volume of traffic, may be considered as of minor importance, provided that equitable rates and fares can be made chiefly with reference to the cost basis.

The only test of the applicability of the distance principle is, therefore, in the examination of particular cases to see whether cost and value can be regarded as the prime factors therein. In a broad sense and in the general acceptance, the abstract idea is that the cost of service to a carrier and the value of service to the shipper or passenger increase as the distance of haul grows, the utilizers of the service ought to pay the charges determined on this basis. So far so good, and there is no doubt as to the justice of it. As a matter of fact, however, there is absolutely no railway anywhere which is not under the influence of some form of competition. As stated before, even if a rail carrier is free from railroad competition, it is still in a position to compete with water and other carriers, not to mention the fact that it is invariably subject to market competition. Moreover, reasonable competition must be, and has actually been, encouraged and conserved with a view to maintaining the equilibrium in the economic and social conditions. As long as the railway business

is under the influence of competition, the charges must of necessity be determined under the forces thereof, irrespective of the absolute cost and value of service, which are supposed logically to support the validity of the distance principle. If the distance principle is to be applied, competitive influences must be completely ignored. The economic law must be disregarded, and the rates and other charges are to be built upon the assumptions which are altogether unsupportable from the actual economic and social standpoints. It is only too natural that such charges are not conformable to the real requirements of justice.

Even if the cost and value of service justified distance rates, they could by no means be justifiably supported whenever the factor of competition is taken into account. Since there is no carrier whose business is free from the control of competition, the distance principle does not hold valid in the majority of cases. However, it is a plain fact that a nearer point may apparently with some degree of justice claim a lesser charge than a more distant point, upon the aforesaid very general theory that the cost to the carrier and the value to the shipper and passenger diminish as distance decreases. They do not necessarily vary with distance, as discussed before, but it may be contended that a nearer point has a natural advantage in respect of distance, which ought to be given ample consideration, if ever a more distant point is allowed to en-

joy a natural advantage of competition, which claims the depression of charges to meet the situation. This contention appears on the surface of it to be well grounded, but in reality it is only sentimental because it disregards the natural economic force which competition creates. There cannot long exist two different charges at competitive points; they tend for equalization. If a higher rate is to be maintained in the face of the competitive condition, the rate will remain only in name, there being no traffic moved on that rate. The carrier will have to refrain from participation in the movement of traffic, and the market will be shut off from the source of supply. Apart from the harmful effect upon industrial development and social welfare, the railway will be compelled to distribute upon the remaining limited traffic all the necessary cost required for its continued service, and, consequently, non-competitive rates will ultimately be raised. There will be absolutely no one to benefit from the maintenance of a rate at a competitive point higher than the economic condition requires. On the other hand, if rates at intermediate points are to be graded from the rates made on a competitive basis, according to distance, the railway may not obtain its necessary amount of revenue, because of the fact that rates at competitive points are depressed down to a point where the additional costs are covered and very little is left for contribution towards the joint cost. If competition requires a rate

which does not at least cover the additional costs, the railway cannot of course enter into it. The contribution which a rate depressed by reason of competition makes towards the joint cost is necessarily smaller than that made by a non-competitive rate, but wherever an additional traffic yields a contribution, however small it may be, towards the joint cost, to carry it is profitable for the carrier and beneficial to the shippers and passengers. Absolutely no harm will come of the making of depressed rates and fares to secure competitive traffic, so long as these charges leave something over and above the additional costs incurred in connection with the movement thereof.

Adherence to the distance principle in spite of competition will leave two alternatives to choose: the elimination of competition; and the advance of intermediate charges, or the bankruptcy of the carriers. Therefore, as long as competition prevails, - competition will and must continue to exist at least to a reasonable extent - the distance rates work in actual contravention to the social interests which the distance principle is designed primarily to protect.

However, complaints based on the above-mentioned contention will never cease to crop up from intermediate localities so long as charges at competitive points are made so as to meet the competitive condition. Railway history furnishes us with an endless series of complaints of discrimination in charges and services. They were and will be the most troublesome of all the problems in connection with railway regulation. In the United States the original enactment, subsequent amend-

ments, enforcement and interpretation of the 4th section of the Interstate Commerce Act have hitherto been the most outstanding features of the history of railroad regulation.

Distance rates are the only means available to appease the complaints of discriminations, and they have been adopted to a growing extent, but, in point of fact, they were not developed from any principle. They were introduced as a compromise to alleviate the conflict between the two apparently opposing notions of the social and economic justice. Since the distance principle does not stand upon a scientific basis and is not advisable, in the majority of cases, in the social and economic interests, it is far from being a principle, but it is a "policy of desperation" as Vanderblue and Burgess put it in their "Railroads: Rates, Service, and Management." The United States is probably the only country where railroads are operated by private corporations, that "unfortunately," as Acworth puts it in the Railway Economics, has had the long and short haul principle applied with much vigor and rigidity.

Insomuch as it is not a principle, but a policy, there remains not much to say about it. If the current notion of justice predominantly favors it, it may be adopted as an expediency. The reasonableness of a charge, even if it is made according as economic forces require, cannot be satisfactorily demonstrated with scientific exactitude, and, therefore, the most readily available means to remove complaints as to un-

reasonable discriminations must be found in the adoption of the distance principle in the adjustment of the charges which is based on apparently justifiable grounds. Only by means thereof the constantly arising trouble can effectively be avoided. Intermediate localities will be satisfied, though temporarily, and the complaints from competitive points as to the deprivation of their natural advantages as a result of the advance of their charges in relation to intermediate points can be forcibly suppressed. For no other reason than this, distance rates prevail invariably on the railways under state operation.

Where the distance system is to be adopted in pursuance of the policy, it must be constructed in such a manner as to avoid, as much as practicable, the disturbance in the trade condition which has long rested on the requirements of economic forces, and to depart as little as possible from actual social and economic justice. A nation's policy does not always conform to the fundamental requirements of social and economic justice. The problem that remains for consideration is, therefore, how distance scales are to be framed and how far they are to be applied. In the consideration of this problem, however, there cannot be any definite standard, each case must be dealt with on its own merit, so as to disturb the long-established economic condition to the least possible extent. If, on the other hand, the policy is one requiring the absolute application of the distance principle, as in the

case of the Japanese Government Railways, although with some exceptions as regards relatively small groups of traffic which are important from the social, industrial or competitive standpoint, there may be nothing serious to be considered in this connection. In such countries as the United States, where competition has long been looked upon as an automatic regulator of trade and industrial activities and has been encouraged rather than restricted to a reasonable extent, the trade and industrial conditions have been settled exactly on the economic basis, and the introduction of distance rates will inevitably cause some disturbance in them.

Just how distance scales are to be constructed and how far they are to be applied could never be absolutely determined. However, the required level of the railway revenue ought to constitute the basic consideration, for whatever the rate system may be, a railway must have a certain amount of revenue. Therefore, any distance rates to be put into force must necessarily yield as a whole the required revenue to the carrier concerned. Each railway even in a limited area is in a different situation financially and physically, which naturally causes a difference in the required amount of revenue. The more diversified are the distance rate scales applicable to different groups of traffic on different railways, even on the different lines of a single railway, in a given territory, the less will the economic conditions be disturbed and the actual social and economic

justice be impaired, but there must necessarily be some limit to diversification, for simplicity in tariffs should also be considered. It would be not only impracticable but impossible to establish a different scale for each description of traffic on each railway or line. Commodities must be classified into a limited number of groups, probably less than a dozen for convenience' sake, and passengers into two, three or five at the most, for this purpose. It is undoubtedly desirable, from the standpoint of convenience and practice, to establish some percentage relationships upon the basic scale either for the highest or the lowest class of traffic for the purpose of constructing several scales for the lower or the upper classes of traffic, according to the definite ratios, instead of making an altogether absolute and independent scale for each of these different classes. The entire railway lines at least within a limited area must be treated as a single unit in respect of the application of the scale ratios. The difficulties arising out of the differences in the traffic costs and other conditions of these railways must be disposed of by means of providing some arbitraries or constructive, traffic or bonus mileage for the weak lines thereof. As regards the unit of distance for the progression of charges, a mile or kilometer ought to be the unit, the charges varying at each addition or subtraction of a mile or kilometer, but if it is impracticable to make a rate for each of these units throughout the entire length over which the scale applies, the mileage, or whatever it may be, may conveniently be made into a number of blocks, within each of

which either the per-mile rate remains the same or the per-ton rate remains the same irrespective of the difference in mileage. The question as to how large the blocks shall be is entirely a matter of personal opinion and actual experiences. There are cases where each mile is made a unit up to a certain point, on which a tapering rate is established, and then the blocking commences to cover the remaining distance, and also cases where the entire length is composed of blocks. Again, each block may remain uniform in length throughout, or it may grow larger as distance increases.

Upon the above-mentioned basis, distance rate scales will be constructed in some form or other, and the next consideration concerns the extent to which they are applicable as to the different descriptions of traffic with the least disturbing effect upon the industrial and commercial conditions. Certainly those commodities, which are very important industrially or otherwise, and must be moved freely over long distances, and also such traffic as is subject to keen competition, must be exempted from the application of the distance rates. If, for whatever reasons, traffic is to be moved in large volume over an extensive area because of the necessity on the part of carriers, industrial interests or the public, rates must be made according to what it consents to pay, irrespective of the distance scales. Important, low-grade, long-distance and highly competitive traffic must necessarily be given exceptional rates. If, however, it is desired to keep to the distance scales still in such a case as the above, even at

least in form only, the points concerned must be equalized in the matter of mileage.

In the last analysis, therefore, distance rates, if applied at all, must be applied only to relatively short-distance local, unimportant, non-competitive traffic. The wholesale application thereof would result in the complete destruction of the prevailing economic conditions to the irrevocable injury of the public interest. After all, choice is open only to either of the two alternatives: the entire denial of the economic force, simply for the sake of avoiding the troublesome complaints of discriminations, which tend to be involved in politics; or the tacit obedience to the economic law, notwithstanding all these undesirable aspects of the situation.

The distance principle tends to prevail to some extent wherever the relative conditions among different railways are fairly well balanced, through the process of the consolidation of different carriers in different financial and traffic situations into a fewer or a single large system, and also wherever competition disappears, through the above-mentioned process, and the full development of industry and population up to a saturation point, so that it is no more necessary and possible to struggle for expansion.

The above statement, however, does not necessarily mean that the laissez-faire policy is always the best of all in respect to the regulation of railway rates. As discussed before, personal considerations may often influence the making of some particular charges, the result whereof will be the

introduction of unnecessary and unjustifiable complexity and distortion into rate structures. These irregularities will not continue long, but will be forced out in the course of the operation of economic forces even if they are left alone. However, the sooner they are removed, the better; hence some justification of the distance principle. Further, each carrier is naturally enough desirous of securing as much additional traffic as possible at any rate so long as it yields something above what is considered the out-of-pocket expenses. This intense desire inflamed by market competition may drive the carrier consciously or unconsciously to overstep the limit set by the general notion of reasonableness, the result being the unnecessary depression of competitive charges and the consequent imposition of heavier burdens upon the defenseless intermediate traffic, and also the waste of transportation due to the unjustifiably long-distance haul and the cross-current carriage of traffic. These evils will also automatically disappear in the long run, but the public policy of distance rates no doubt goes far towards the prevention in advance or the quicker elimination thereof, to the benefit of both the public and the carriers.

Lastly, the policy of adopting the distance principle is to some extent justified in the determination of railway charges in the case of liberating water and other carriers from railway pressure, so that they may be protected from being nipped in the bud in spite of their potentiality. If it is deemed that the railway facilities alone are not sufficient to

supply adequate service in times of emergency, other means of transportation must be developed at any cost. If the railway charges are left alone, they may be driven out in spite of the public necessity or they may not grow in spite of the ample possibility of development under equal opportunities.

After all, distance rates are not based on any scientific principle, but are the result of the public policy which is or is not desirable in the light of fundamental social and economic justice. In what form it is to be constructed and how far it is to be applied entirely depend upon the extent and scope of the policy itself. It will disturb in the majority of instances the stabilized industrial conditions to a more or less extent, unnecessarily from the economic point of view, but, on the other hand, it must be admitted that there may undoubtedly be occasions where it is not too hastily to be branded as a product born of a "policy of desperation" which is framed under political pressure.

III. DETERMINATION OF DISTANCE RATE SCALE IN PRACTICE

How the distance principle is to be applied to the proces of rate-making has already been discussed, from the points of view of both validity and justifiability or desirability. The next thing to do is to inquire into how it is applied to actual cases, with a view to examining the reasonable extent to which it is applicable in reality.

A. Southern Class Rate Investigation

In this connection, the recent investigation made by the Interstate Commerce Commission into the Southern class rate system furnishes an abundant material of interest and importance. A discussion will, therefore, be made of the present subject by reference to the result of the above investigation. It was instituted in February, 1922, upon the Commission's own motion, for the purpose of determining whether the prevailing rates were "unreasonable, or unduly prejudicial to, or unduly preferential of particular localities, persons, or descriptions of traffic," as alleged by the proponents of the distance principle. It was not the primary purpose of the inquiry either to add to or subtract from the aggregate revenues of the carriers concerned, but rather to adopt, if possible, a class rate structure which would be as simple as it could be made, the then level of revenues to be conserved and at the same time due regard to be had for the public interest. The investigation covered the various aspects

of the southern situation and a final report was made in July, 1925, in which a distance scale was proposed to be adopted thruout the Southern Territory east of the Mississippi River and south of the Ohio river and the line of the Norfolk and Western from Bristol, Tenn., to Norfolk, Va., and also for the traffic between the above mentioned territory and the Official Territory east of the Mississippi River and north of the Southern Territory. Intrastate rates were, of course, out of the scope of the investigation, but it is expected that, when it is carried into effect, the intrastate rate system will be readjusted automatically to conform to the new interstate structure. Conflict between them is not of course to be allowed to exist. The date of the enforcement of the proposed scheme was not fixed, but it was desired that the new rates should become effective not later than January 1, 1926, provided that all the unforeseen matters of detail that would possibly be encountered and require consideration in the preparation of the rates for actual publication in tariff form had been disposed of satisfactorily by the aforesaid date. It was later decided that the scale would be carried into operation on and after July 1st,1926.

B. History of Southern Rate Structure

However irregular and inconsistent the rate system in the South may appear, it is the product of inter-operation of the economic forces in the territory, subject to keen and severe transportation and market competition, and with peculiar traffic conditions.

First of all, the Southern Territory is surrounded by navigable water on the Atlantic Ocean in the east, the Gulf of Mexico in the south, the Mississippi River in the west, and the Ohio River in the north. Moreover, a number of navigable waterways penetrate the interior sections of the territory. Secondly, before and long after the construction of the railways, the South was almost wholly an agricultural country with cotton and tobacco as the principal staples of production. These commodities together with naval stores and lumber constituted the majority of the outbound traffic and manufactured products and grain comprised the inbound business.

The traffic was chiefly moved by means of the ample natural water facilities among different important trading centres mostly situated on the water lines. As regards the relation between the railways constructed and the waterways, some of the lines of the former formed links between the water lines or acted as feeders, but, in most cases, they were competitors and acute struggle for traffic began close upon the spread of the railway net. The natural result of the situation was the development of the basing point system of rates, in which points directly accessible through navigable waters were given very low rates, while a much higher level of rates prevailed at interior points less favorably situated. On the local traffic which was free from competitive influence, rates rapidly increasing as distance grew were established upon so high a level that the scale of rates was compelled to be cut down, as a

competitive point was approached, by the combination of the depressed rate to such point and the local rate back. Thus it came about that in the Southern Territory the localities surrounding or "tributary" to the favorably located larger trading centres were given rates which were based on those for the centres, known as basing points. The situation is very clearly described, as follows:

"In this competition of boat and railroad the rates of transportation, which were directly controlled by it, soon reached a point to which the railroads could not possibly have reduced all their tariffs and still maintain a profitable existence. They did not attempt such a reduction, but, on the contrary, while reducing their rates at the points of water competition to any figures that should be necessary to enable them to obtain the freights, they kept them up at all other points to such figures as they deemed the service to be worth, or as they could obtain. It often happened, therefore, that the rates for transporting property over the whole length of a road to a terminus on a water highway would not exceed those for the transportation for half the distance only, to a way station not similarly favored with competition." (1 I.C.C.254)

Later, the basing points became extended into the interior. As the railway net was fast being spread, the competition with the waterways was supplemented by rivalry among the rail carriers themselves, which was often much more intense than the former, and depressed rates were accorded also to important railway junctions, such as Atlanta, which were not situated on

navigable waterways. The basing point changed in nature, and it was defined as a point "where there was considerable freight". (3 I.C.C.19) As long as competition between carriers and also markets continued in operation and the balance between central and local development remained uneven, the rate structure remained developing on the basing point system. Naturally, it was attended with a growing number of complaints from the unfavorably located places, and the greater part of the cases brought before the Interstate Commerce Commission and the Supreme Court of the United States for adjustment and decision seems to have originated from this situation in the South, with respect to the provision of Section 4 of the Interstate Commerce Act, which prohibited, with certain qualifications, a higher charge for a shorter than for a longer distance over the same route, in the same direction. 168 U.S. 144; 175 U.S. 648; 181 U.S. 1; 181 U.S. 29; 190 U.S. 273. In fact, the basing point system in the South and elsewhere constituted one of the important contributing causes of the Act of 1887, as indicated by the following quotation from the case decided in 1889, in re Tariffs and Classifications of A. & W. P. R. R. Co., 3 I.C.C. 19. It throws some light on the attitude assumed by the Commission in connection with the enforcement of the long and short haul provision of the Act.

"The belief has forced itself upon this Commission with increasing strength", from a series of investigations carried out by it as a result of the enactment of the long and short principle in the above mentioned statute, "that this system of com-

bined joint and local rates to points in the Southern States intermediate to the so-called basing points is in a very great degree responsible for the lack of local development in that region, except at favored localities." - here the cause and effect seem to have been reversed - "That there are difficulties in the situation is readily conceded; that there are present and temporary advantages to the carrier in the establishment of thriving cities and jobbing centres distant from each other one hundred miles or more, with stretches of intermediate territory where all distribution and collection of articles of consumption and products of the soil are made at local tariff rates, may also be conceded;" - here the opinion seems to have assumed that rates could be determined entirely at the carriers' free will, and that they could be made by the carriers, without regard to their present financial needs, simply in the distant hope that traffic in general would develop on such rates in the long run.- "Nevertheless, it is the belief of the Commission that it was the situation in other parts of the country, mostly agricultural, without important manufactures, mills or other business enterprises, and paying rates for transportation largely in excess of the customary tariffs to competitive centres, that attracted the attention of Congress and led to the incorporation of the short-haul clause . . . as a leading feature of the Act to Regulate Commerce." All this virtually shows that distance rates are not based on a principle, but it is simply a matter of policy." . . . the expression of the short-haul principle has been clearly made in the Act . . . ; and it would be the duty

of any tribunal competent to aid in the enforcement of a statute of this nature, to insist upon its execution, subject only to such just exceptions as the language of the Act may reasonably sustain."

Under the long and short haul clause, the Interstate Commerce Commission started to eliminate the basing point rates, but it was made clear soon afterward that it could not deal effectively with the rate system, as long as the words "under substantially similar circumstances and conditions" remained in the 4th Section of the Act. It was held by the Court that controlling competition always made circumstances and conditions, under which traffic was carried, substantially dissimilar so that departure from the provision of the section was justifiable. Moreover, a carrier, it was held, could in the first instance determine the existence and extent of competition and make rates accordingly. Making rates for the purpose of meeting competition of any kind was a matter of the carriers' right and not the Commission's favor. To make the situation still more unfavorable, there was rendered a decision that, under the original Act, the Commission had no power to establish a rate for the future, the power thereof being limited to the passing of judgment upon the justifiability of those rates that had been actually made by the railways. This case also originated in a southern case. 167 U.S. 479; 6 I. C. C. 195.

The general outline of the interterritorial situation that developed under these conditions will be given briefly as follows: Railway lines were first built from points on the

Gulf to interior parts, and they were connected on the seaboard with steamship lines operating from eastern ports. These water-rail routes maintained through rates, and for many years they were the principal means of transportation between the East and the South, and they have continued to be of considerable importance till the present time. The all-rail routes were later constructed, and their rates were naturally built upon the water-rail structure. Competition forced the depression of all-rail rates at an early date between much of Southern Territory and most points in the Official Territory east of the Buffalo-Pittsburg zone. In this manner was created the rate system for the inter-territorial traffic between the East and the South.

As regards the rates between the Central Territory and the South, they have been constructed primarily upon the combination of the local rates on the Ohio River crossings or Virginia cities. As the Central Territory grew in industrial importance, however, competition with the eastern centres became keener, which affected the rates concerned to a central extent. Generally, the water-rail rate between Baltimore, Md. and Atlanta, Ga. has been made a key-rate for the rate between Louisville, Ky. and Atlanta, the surrounding rate structure having been based on the said standard.

As regards rates between the Ohio River and the Mississippi River Crossings, the development of the carrier and market competition resulted in a rate war in the 80's, which has led to

a fixed relationship in the rates between the Ohio River crossings and between these and Memphis, Tenn.

C. Recent Changes in Industrial and Transportation Conditions in the South

Remarkable changes have during the last two decades taken place in both industrial and transportation conditions in the South, which have affected and will continue to affect the rate structure in the Territory to conform to the changed circumstances and conditions. The more the balance in conditions approaches equilibrium the more closely the rate situation adjusts itself in conformity with the long and short principle, even without pressure from outside. In addition, public pressure has recently been brought to bear upon the rate situation in a growing degree.

First, the South has rapidly been emerging from the primitive agricultural stage to the industrial phase, in which mining and manufacturing play a large part. With a great steel and iron industry in Alabama; a large milling industry in the Carolinas and Georgia; tobacco manufacturing in North Carolina and Virginia; thriving furniture industry over the whole area; and with ample mineral and natural resources, the character and currents of railway traffic in the South are now quite different from what they used to be up to twenty years ago.

Secondly, competitive conditions, which affect a rate structure to the greatest extent of all factors, have also changed considerably. Numberous small and independent railways have already been grouped into virtually four great systems

through consolidation and the community of interest, namely: 1. The Southern System, covering the entire South and reaching nearly all the great strategic points on the border and in the interior; 2. the Louisville & Nashville, Atlantic Coast Line System, equally extensive, reaching most of the strategic points served by the Southern System; 3. the Illinois Central System, which is the great Mississippi Valley line, reaching also Louisville, Ky., Evansville, Md., and Birmingham, Ala., and, through the Central of Georgia, most of the important cities in the Southeast, extending also to Chicago, Ill., Omaha, Nebr., and Sioux Falls, S. Dak., and, through the Ocean Steamship Company, to New York and Boston in the East; and, 4. the Seaboard Air Line System, serving the eastern portion of the Southern Territory. In addition to these four major systems, there still remain in existence a number of short lines and certain railways of greater importance.

As a result of the reductioon of the rival railways to a limited number, interline competition has been greatly alleviated, but it still operates actively among the four great systems, exerting not a little influence upon the rate structure, though in a much lesser degree than when the interests of the numerous independent railways were concentrated in certain communities.

Thirdly, as regards the water-rail business, it has also undergone a remarkable change through the process of consolidation. The former east-and-west lines, which were engaged in acute competition not only among themselves but also with the north-and-south lines, have practically been grouped in a smal-

ler number of large systems. The result has been the disappearance of competitive exigencies in respect of water-rail traffic.

Fourthly, water competition on the navigable rivers has been reduced to a negligible factor in the rate situation of the South, mostly through the growing influence of the consolidated rail carriers. The water lines, although subject to constant pressure from their parallel railway lines with drastic rate cutting, were often assisted in their operation by the short railways which were not their rivals but acted instead as feeders. These feeding lines have been absorbed into the larger railway systems, and the steamboats have since been deprived even of this support. The inland water facilities have gradually disappeared from the scene, with a few boats remaining under operation by the Federal Government on the Mississippi and on the Alabama and Warrior Rivers and some similar service under private operation on the Ohio. With these few exceptions of no importance, water competition is now confined to the Atlantic Ocean and the Gulf, so far as the rate situation of the South is concerned.

Fifthly, the trend towards conformity to the long and short haul, or the distance principle has been greatly accelerated by the changes which took place in the statute and in the consequent activities of the Interstate Commerce Commission. In 1910, the words in Section 4 of the Interstate Commerce Act, "under substantially similar circumstances and conditions", which had almost completely fettered the Commission in the enforcement of the provision of the long and short haul clause,

were eliminated. Later in 1920, the clause was further amended so that the Commission was supported by statute in respect of the position which it had for some years taken in the enforcement of the principle embodied in the clause. As a result, any competitive charge should in no case be depressed so low as will not be reasonably compensatory for the service performed; any charge at such an intermediate point on a circuitous line or route, as is not longer than its rival direct line or route between the competitive points, should not be higher than the depressed charge at the competitive points; and, lastly, the mere potentiality, or possibility of recurrence, of water competition should not be made a ground for departure from the long and short haul principle. Moreover, the superiority of the Commission's regulatory power was established to the State authority in the same year through specifically empowering the Commission to remove discriminations caused by intrastate rates against interstate commerce.

Upon the restoration of the original power by the Interstate Commerce Commission in respect of the enforcement of the long and short haul clause, through the amendment of Section 4 in 1910, the carriers were obliged to apply to the Commission for any particular relief from the provision of the clause on the traffic from eastern cities, Ohio River crossings, and New Orleans to South Atlantic and Gulf ports, points on navigable streams, and certain other interior basing points in the Southeast and Mississippi Valley, and also for traffic

from St. Louis and Chicago to Gulf ports. The result in 1914 of the Commission's investigations of these applications was generally that departure was allowed at all the south Atlantic and Gulf ports and at all the Mississippi River crossings, and also at the points on other navigable rivers where the railways had to meet actual or potential competition, but it was denied at the basing points where no such competition was found to exist, except for all-rail and water-rail traffic from eastern cities to Birmingham, Ala., Meridian and Jackson, Miss., through Norfolk and the south Atlantic ports, which were exposed to rail competition from the West and to water-rail competition via the Gulf ports. (30 I.C.C. 153; 32 I.C.C. 61).

Under the above-mentioned order, all the South-bound class rates and also part of the south-bound commodity rates were revised in January 1916, but the north-bound rates and the corresponding interior rates had not been revised before the railways were taken over by the Government in January 1918. During the Federal control, however, the Commission carried out several readjustments in the rates, which had a very far-reaching effect upon the whole situation, the provision of Section 4 of the Act being more rigorously enforced than ever before. The rates, both class and commodity, to certain points surrounding Nashville, Tenn., from all the southern border points, from the interior southeastern points, from all the points in the Official Territory, and from the Western Trunk-Line and Southwestern Territories, were adjusted according to the long and short haul principle, on the ground that there was no water

or rail competition at Nashville which would justify higher rates at the intermediate points than at Nashville. (55 I.C.C.648). The fourth section violation was also denied for the rates between St. Louis, Mo. and Memphis, Tenn. on the one hand and New Orleans on the other, because of the absence of controlling competition warranting higher rates at the intermediate points. (55 I.C.C.515) The rates from Chicago and the points related thereto, and from the Ohio River and the upper Mississippi River crossings down to the lower Mississippi River points, Mobile, Ala., Meridian and Jackson, Miss. were likewise revised to conform to the principle, for the reason that no real competitive conditions existed at Vicksburg, Natchez, Miss., New Orleans, La., and Mobile, Ala. to sufficiently justify lower rates to these points than at Meridian and Jackson, Miss. (57 I.C.C.107)

As said before, the attitude of the Interstate Commerce Commission in the above mentioned adjustments exerted a very far-reaching effect upon the whole rate structure in the South, in that the railways must adjust their rates related to those adjusted rates if certain traditional relationships were to be conserved with other points of origin and destination, to avoid serious disturbances in the trade and traffic conditions, and also in that the railways were forced to the belief that the existing and potential water competition on the Mississippi River would no longer be accepted as a sufficient ground for

the fourth-section departure when complaints were raised. The carriers decided, or rather were compelled to decide, that the "time had come to eliminate such fourth-section departures generally in the South and to put to the test a system of rates wholly disregarding water competition, or what they termed 'dry-land basis'".

However, as a temporary measure to meet the exigencies, which had been created consequent upon the adjustments based on the fourth-section orders, and which did not permit of postponement in the disposal thereof, a series of revisions was effected in the rate system. Accordingly, in 1921, the interstate class rates within the Mississippi Valley Territory and between that territory (including the Gulf ports) and the Ohio River crossings, St. Louis, Chicago, Indianapolis, and the points related thereto, were revised in the so-called Pitt readjustments. It was later modified in 1922. The rates between Nashville and the Ohio River crossings, Memphis, and St. Louis; and also those from the eastern and Virginia cities to Nashville, were readjusted in 1921. (61. I.C.C.308).) The rates from the eastern and Virginia cities to the Mississippi Valley Territory and certain southeastern points adjacent thereto; those from the Carolina Territory to the Mississippi Territory; and those from New Orleans, Memphis, and certain other pivotal points in the Mississippi Valley to the eastern and Virginia cities, were also revised in 1921. (64 I.C.C.107, 306). The rates from the Southeast to the lower part of the Mississippi Valley South of Memphis were readjusted, in which most of the fourth-section departures were eliminated in 1922.

In the meantime, the carriers were working out a scheme in which the rate system in the South would be completely reconstructed on a permanent dry-land basis. A Fourth Section Committee was created for the purpose, and it completed a tentative class rate structure based on the distance principle, which was submitted to a conference of all interested shippers in July, 1921. The result was a joint petition that an investigation be instituted by the Commission on its own motion.

D. Proposed Distance Scales

In connection with the southern class rate investigation in question, several different scales of distance rates and exceptions were proposed by the carriers, State Commissions, and trade associations, and a final scheme was arrived at as a compromise among these various proposals. It was only too natural that the system proposed by the carriers was more conservative than the others framed by the State Commissions and private associations. The distance scale, which was finally approved by the Interstate Commerce Commission, was the result of the combination of certain features in all those proposals by reference to the rigid policy which the Commission had for years adopted on the whole. In it local considerations were largely disregarded, and the distance principle was faithfully adhered to throughout the entire system with as few exceptions as practicable. Both actual and traditional aspects of the industrial and other conditions were almost completely ignored,

so that the principle might be made to apply with the minimum of departures from long and short haul rates.

Some of the outstanding features of those different plans will be discussed seriatim.

(All rates hereinafter stated are for 100 pounds of first class articles, unless otherwise specified.)

1. Carriers' Scheme

The rates proposed by the carriers did not strictly meet all the requirements of the distance principle, but actual competitive forces and historical relations were to some extent taken into account in the construction thereof. The result was that the distance scale rates were to apply mostly to short distance hauls, and specific rates to competitive and traditionally important centers, with a view to avoiding violent trade disturbances. Throughout, however, the proposed rates were so built that the existing levels of revenue might be conserved. Consequently, the rates which had been accorded to the important basing points were largely left untouched, and short-distance rates were to be raised so that they might be graded down as distance diminished or at least made as maxima for intermediate points, without disturbing the prevailing levels of revenue. The proposed scale was not found satisfactory by either the Interstate Commerce Commission or shippers in many respects, chiefly because of the conservative attitude on the part of the carriers, although the Commission conceded that it was beyond question "a vast improvement over the present rates".

(a) General Characteristics

In the framing of the plan, the carriers were of

course aiming at a scale which would completely overhaul the rate structure which had been the cause of constant troublesome complaints as to discrimination, the scale to apply extensively and permanently throughout the Southern Territory, and departures from the long and short haul principle to be reduced to a minimum, so that the eternal source of vehement attacks, which if left, would drive the carriers eventually to extreme difficulties, might be exterminated.

The general characteristics of the proposed scheme were as follows:

First, the rates were fundamentally based on mileage, although they had not been wholly determined by distance, and there were many inconsistencies from the distance standpoint. Distance, however, was made the predominating factor in the making of rates.

Secondly, the relationships between the different classes were established definitely and uniformly.

Thirdly, the same rates were to apply in both directions throughout. The scale of distance rates, which was at the bottom of the whole proposed adjustment within the Southern Territory would apply uniformly, as maximum, if not actual charges, throughout the area on both main line and branch line traffic, except in Florida and on certain short lines which would receive special considerations because of peculiar financial, traffic and other reasons.

Fourthly, the long and short haul principle was adhered to, with exceptions in cases where circuitous routes were to meet competition with their direct routes.

Fifthly, harmony would be brought about between the interstate and intrastate rates, by establishing similar distance rates to apply to intrastate traffic after interstate rates were determined.

(b) Intraterritorial rates

The proposed rates were divided into two different groups, intraterritorial and interterritorial, because of the necessity of taking into account the difference between the conditions under which traffic moved entirely within the Southern Territory and from that Territory to other sections of the country, and vice versa.

(1) Construction of Scale

In the construction of the proposed scale, historical aspects were taken into full consideration, and certain specific rates, which had actually been in existence, were taken as they were or in a little modified form, as basic rates, the scale being built like an encircling wall around those for the shorter distances. As a matter of fact, three fixed points were selected for the purpose of determining those basic rates for varying distances.

The first task was to determine the rate for the first unit of distance. It was fixed quite differently from the prac-

tice supposed to be followed in the application of the distance principle, but was arrived at so arbitrarily that it will undoubtedly appear unreasonable and intolerable to the exponents of the principle.

Attempts were made to study the actual cost of the terminal receipt and delivery of the less-than-carload traffic at several stations, including large terminals, junctions of a fair size and also a small local station, during two weeks. To the out-of-pocket expenses thus worked out were added certain amounts to cover a return on the estimated value of the terminal property used, including land.

First, the stations, at which the cost studies were carried out, were as follows:

Nashville, Tenn.
Chattanooga, Tenn.
St. Louis, Mo.
Atlanta, Ga.
Huntsville, Ala.
Rome, Ga.
Calhoun, Ga.
Gladsden, Ala.

As it was absolutely impossible to conduct the studies more extensively, the above terminals were selected for the present purpose; Atlanta and Chattanooga being typical of large terminals, Huntsville and Rome of fair-sized junctions, and Calhoun of small local stations.

Secondly, the period covered in this connection was limited to only two weeks in the year when the traffic was light, but during the period when the traffic was heavy in the said year.

Thirdly, the traffic, which was subjected to the studies, was limited only to less-than-carload business, on the as-

sumption that it constituted the greater portion of the class traffic, for which a scale was to be framed and because of the fact that it would simplify the calculation of cost. As was disclosed later, however, it did not constitute 90% of all the class traffic, as originally estimated by the carriers.

Fourthly, as stated before, the studies covered not only the additional cost incidental to the terminal handling, but also an 8% return on the value of the terminal property employed in connection with the less-than-carload traffic handled. In respect thereof, it was assumed that the platforms, warehouses and their tracks were exclusively devoted to the handling of the less-than-carload traffic; that the office buildings were used for the said traffic in the proportion that it bore to the carload traffic in the number of consignments; and that the other properties were employed for this traffic in the ratio of the time consumed in the switching thereof to that of the carload, or in the ratio of the cars handled with the less-than-carload traffic to those with the other traffic.

However, the following items were exempted from the calculation, on the ground that some of them pertained to the line-haul cost rather than to the terminal charges;

> Taxes, loss and damage in terminal handling, maintenance of main tracks, part of handling empty cars, traffic expense, telephone and telegraph expense, dispatching of trains, and maintenance of interlockers.

The result was that the less-than-carload traffic was

to contribute towards the profit required 2.44 to 5.74 cents per 100 pounds at both terminals of origin and destination.

Fifthly, as regards the additional expenses, the calculation was effected on varied methods. First of all, the constituent items were arranged under three categories: platform, switching, and clerical. The platform cost was wholly allocated to the less-than-carload traffic, as in the case of the computation of the property return. The switching expenses were apportioned to this traffic separately from the carload, either on the basis of the time consumed respectively in switching the cars, or the respective actual number of the cars switched, or on the assumption that four less-than-carload cars were equivalent to one carload car in the matter of switching expenses. Lastly, the clerical cost was divided according to the number of the consignments of both groups of traffic, irrespective of the size, value, cost, etc. of each consignment of the goods.

The result of the calculation on the above method was that the additional cost incurred in connection with the receipt and delivery of the less-than-carload traffic was 6.76 to 21.28 cents per 100 pounds.

The total cost per 100 pounds was determined, therefore, at 9.20 to 27.02 cents. However, the result of the computation carried out on exactly the same basis by the accountant of the Interstate Commerce Commission was 12.13 to 17.90 cents. On this estimate of the minimum, the initial rate for the first class per 100 pounds was to be based. In view of the fact that lower

rates were to be given to the other classes, and in consideration of the past experience as to short-distance rates, the carriers decided that the rate required should be 30 cents for the initial unit of distanŝe.

The selection of stations for this purpose, the period over which the studies were made, and the methods employed in the allotment of cost were entirely arbitrary, and did not satisfy the Interstate Commerce Commission at all, which will be discussed later.

Apart from the merits or demerits of the carriers' attempt in this regard, the initial standard point was thus determined, and the next thing to do was to fix the intermediate and final points of the rate level.

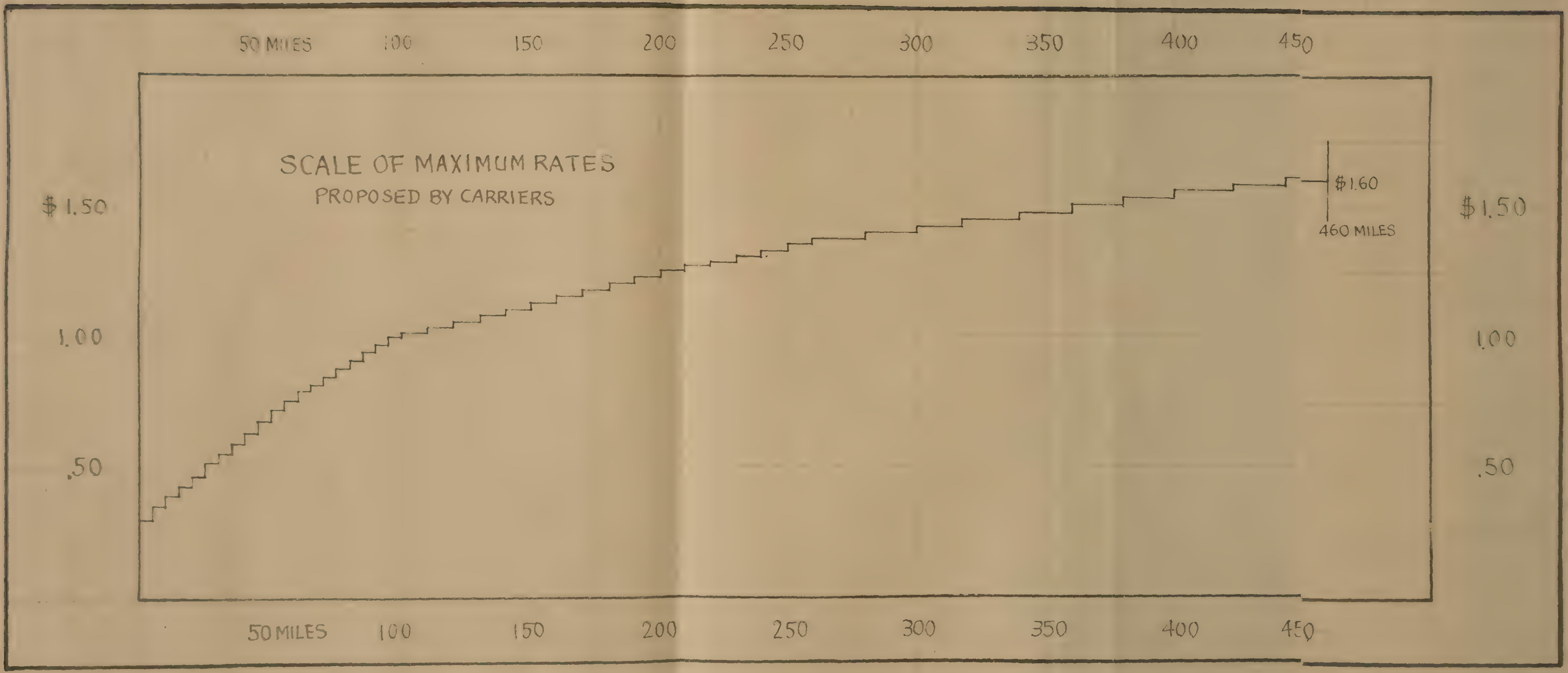
The second was the rate of $1.45 for the distance of 330 miles which had been the actual rate for that distance from Birmingham, Ala. to Cairo, Ill., determined in the Rates to and from Nashville, 61. I.C.C., 308 in 1921.

The third was the rate of $1.60 for the distance of 460 miles, on the basis of the rate from Atlanta, Ga. to the Ohio River points, the shortest single-line distance being 469 miles, which had been determined also in the above-mentioned case. This is the outermost limit out of which the scale did not extend.

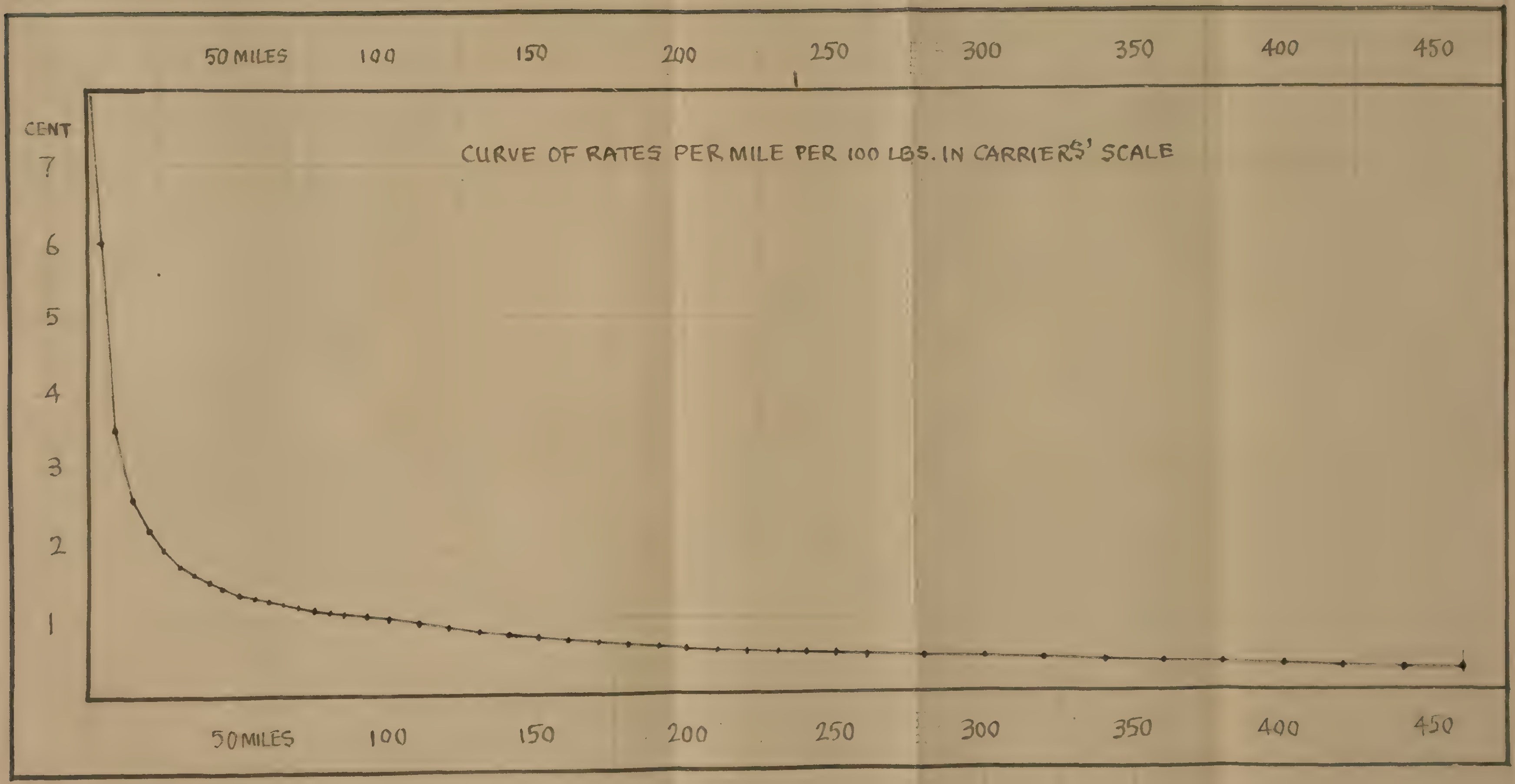
The above three points were connected with a line, the result whereof was a scale of distance rates meant to be applicable as a basis throughout the Southern Territory. The line, however, was not at all straight, but broken and curved very remark-

ably because of the block and tapering systems. The line, as shown in the accompanying diagram, rose steeply for the first 100 miles reaching $1.00 at 101 miles, beyond which the rise gradually became less rapid. The blocks were provided as follows:

1st block	1 mile - 5 miles	$.30	(initial rate)
2nd "	6 miles - 10 "	.05	(additional rate)
3rd "	11 " - 15 "	.04	(" ")
4th "	5 miles	.04	(" ")
.	.	.	. .
.	.	.	. .
.	.	.	. .
10th block	46 miles - 50 miles	.04	(additional rate)
11th "	51 " - 55 "	.03	(" ")
12th "	5 miles	.03	(" ")
.	.	.	. .
.	.	.	. .
.	.	.	. .
20th block	96 miles - 100 miles	.03	(additional rate)
21st "	101 " - 110 "	.03	(" ")
22nd "	10 miles	.03	(" ")
.	.	.	. .
.	.	.	. .
24th block	131 miles - 140 miles	.03	(additional rate)
25th "	141 " - 150 "	.02	(" ")
26th "	10 miles	.02	(" ")
.	.	.	. .
.	.	.	. .
.	.	.	. .
36th block	251 miles - 260 miles	.02	(additional rate)
37th "	261 " - 280 "	.03	(" ")
38th "	20 miles	.03	(" ")
.	.	.	. .
.	.	.	. .
.	.	.	. .
43rd block	381 miles - 400 miles	.03	(additional rate)
44th "	401 " - 420 "	.02	(" ")
45th "	421 " - 440 "	.02	(" ")
46th "	441 " - 460 "	.02	(" ")


SCALE OF MAXIMUM RATES
PROPOSED BY CARRIERS

98-2


50 MILES
100
150
200
250
300
350
400
450
CENT
7
6
5
4
3
2
1
CURVE OF RATES PER MILE PER 100 LBS. IN CARRIERS' SCALE
50 MILES
100
150
200
250
300
350
400
450

The scale of rates, as indicated by the broken and curved line in the diagram, appears to conform to what the distance principle requires, but, in reality, it was not based on any scientific basis. The curvature was simply the result of the drawing of a line connecting the initial point, which was determined in a very arbitrary manner, and an intermediate point, and also the outermost point, which were determined both on the actual rates fixed independently by competitive exigencies. The blocks were provided for the sake of simplicity in the forms of tariffs, but the length of each block was determined also arbitrarily solely on the general assumption that the terminal cost spread over longer distance would diminish per unit of distance, making the total charge the smaller per unit.

In connection with this scale of rates, relationships between different classes were determined as follows, after certain modifications made in the original plan:

Classes	1	2	3	4	5	6	A	B	C	D
Percentages	100	85	70	55	45	40	30	35	25	22.5

As regards rates for joint-line hauls, differentials were to be added to the scale rates, beginning with 15 cents first class for 60 miles and under, and ending with 6 cents for distance 360 miles and over. To be more precise, the maximum scale thereof is as under:

For Distances	First Class
60 miles and under	Add 15 cents
160 " and over 60	" 13 "

For Distances	(Cont'd)	First Class
260 miles and over 160		Add 11 cents
360 " " " 260		" 9 "
460 " " " 360		" 6 "

Rates on the other classes would be constructed under the unidorm percentage relationships to the first class rates thus determined. The differential scale also seems to have been framed frequently applicable for such joint-line hauls.

(2) Limitations in Application

Because of the limitations proposed to be provided, the actual result of this rate scale would generally be nothing but the blanket increase in the existing rates between 50 and 125 miles, with depressed competitive rates at most of the important points practically remaining untouched, as a witness testified before the Commission, rather than the removal of the fourth-section departures, resulting from the operation of the depressed rates at certain points, which had been made because of actual or potential water competition. It was really based on distance, but the basis was to a great extent modified by a desire on the part of the carriers to maintain the existing conditions, created by the force of competition, and the historical and traditional relations, which had been very firmly embedded in the Southern rate structure. The carriers even acknowledged that in the construction of the distance rate scale, distance was by no means the principal or controlling factor, but great weight was placed on other features, such as geographical location, grouping of points of origin in the same general territory and the existing adjustments.

The scale was proposed to apply uniformly throughout the Southern Territory, but, as a matter of fact, it would apply only to local, non-competitive, defenseless traffic, and important points were quite sufficiently protected by means of numerous exceptions and otherwise, on the ground that violent trade disturbances must be avoided as much as possible. Indeed, some of the specific rates proposed were depressed below what they might reasonably be, because the carriers wished to avoid "too violent a break with the past."

After all, the distance scale was not by any means a basic measure of rates underlying the entire adjustment. It was limited only to 460 miles, in spite of the fact that there are many hauls in the Southern Territory of more than twice that length. Besides, the scale rates were virtually to apply strictly, for the most part, to traffic to be carried for less than 200 miles, comprising most of the distributive traffic locally from the jobbing centres. Beyond 200 miles the scale served merely as a maximum limit of actual rates, and it would frequently be cut, sometimes considerably, by specific rates proposed. In the last analysis, therefore, the proposed distance scale was not a scale scientifically constructed as required by the distance principle, but a maximum scale built upon the pre-determined key rates, its chief function being to increase the short haul distributive rates out of the jobbing centres.

As regards specific rates, which would constitute the exceptions to the distance scale rates, most of the important points were to retain their former depressed rates or at least to be given favorable rates a little modified from the existing ones. Throughout the specific rates proposed, the underlying idea was that the fourth-section departures be reduced to a minimum number, a uniform mileage basis established as far as practicable for the shorter hauls, a violent increase avoided in the existing depressed rates, revenue conserved by blanketing the new rates at the depressed points back over the intermediate territory, often for considerable distances and traditional groupings preserved except it would involve too glaring a disregard of distance.

In the development of the new structure, Atlanta, Ga. and Birmingham, Ala. were used as key points, and the rates to these points from the various important border cities were first of all determined on the basis of the historical relations and the changed conditions. Rates to and from the important junction points were next fixed, on the basis of mileage and the established group relationships. Finally, rates to the local points were determined by according them the same rates as the nearest junction point beyond or by grading them. Rates for the shorter hauls were fixed simply by the maximum scale rates determined automatically by these predetermined economic rates.

Ohio River Crossings and Related Points. The relations between the Ohio and the Southeast would remain unchanged on the

whole. The points on the river between Cairo, Ill. and Cincinnati, Ohio, would be equalized in their relation to Atlanta, Ga. and the points related thereto and also Chattanooga, Tenn. The lower crossings from Cairo to Louisville, Ky. would also be equalized to Montgomery, Ala. and the surrounding points and upward to Nashville, Tenn., the rates being lower than the Cincinnati rates by a certain amount. The rates from Cincinnati to Birmingham, Ala. and Atlanta, Ga. would be the same. To the Mississippi Valley Territory, Cairo and Paducah, Ky. would take the same rates for long-distance traffic. The Evansville-Louisville group would have certain differentials over Cairo, north of Vicksburg, Miss. from that point south, and from Cincinnati. To the Carolina Territory, Cincinnati and Louisville on the one hand, and Cairo and Evansville on the other would be equalized respectively with certain differentials. To the eastern sections in Tennessee a similar adjustment would be made. From Memphis, Tenn. to the points in the Southeast certain differentials would be made under the lower Ohio River crossings and Memphis would be equalized. Similar arrangements would be provided for the relation to Knoxville and other points in eastern Tennessee, to North Carolina points, and to certain points in South Carolina. Nashville, Tenn. and St. Louis, Mo. would also be related to the Ohio River crossings with certain differentials.

Virginia Cities. The Virginia cities would be divided into two groups because of the difference in the average mileage to the South, and the rates therefrom to certain equalized groups

be made under definite differential relationships. One of the Virginia groups would be equalized with the Ohio River crossings in respect of traffic to the basing point Atlanta, Ga. On the whole, the proposed Virginia rates would have some relations with the water-rail rates from Baltimore, so that the Baltimore rates might effectively apply via Norfolk as well as via the South Atlantic ports without fourth section departure.

South Atlantic Ports. The ports from Charleston,S.C. to Jacksonville, Fla. would remain in a single group in respect to traffic from the Ohio River crossings and the points related thereto. These and the other South Atlantic ports would be grouped in one way or other, under certain differential relationships, for traffic from other sections in the Southern territory.

Gulf Ports and Mississippi River Points. The points on the lower Mississippi from Greenville, Miss. would be grouped for traffic from the points in Virginia and the Carolina Territories, and all the Gulf ports be similarly grouped for traffic from the Ohio River crossings and the points related thereto. As to the key point Atlanta, Ga., New Orleans, Vicksburg and Greenville would be equalized with all the Ohio River crossings; and as to the other key point Birmingham, Ala., New Orleans and Natchez, Miss. would be equalized with the Cairo-Louisville group, with Vicksburg and Greenville being given a lower differential to Birmingham.

Carolina Groups. The grouping system on the whole would remain in respect to traffic from the Virginia cities and beyond

the rates at intermediate points between these groups to be graded from one group rate to another.

Southern Ohio Group. The points along the southern border line of Ohio would remain in a single group for traffic to the Carolinas, the Mississippi Valley Territory, and the Southeast.

Other Groups. There would be many other minor groups particularly in respect to long-distance traffic, and some of these groups had some historical background while others were to be newly established with a view to conserving the carriers' revenue.

Florida. On the whole, the rates into the points in Florida, would be the combination of the basing factors to Jacksonville and specifics beyond. The basing factors would be determined on the basis of the proposed local rates to Jacksonville less something with a view to avoiding a sudden rise in the Florida rates, e.g.,

	Proposed Local	Basing Factor
From Ohio River crossings	$2.08	$1.60
From Atlanta	1.40	1.13

The specific to be added to the Jacksonville factors would be determined by adding 5 cents to the first class local rates in effect prior to July 1922, those for the lower classes to be determined under the standard percentage relationships. The reason for the addition was that a reduction in the revenues of the

Florida lines due to the application of the new relationships might thereby be avoided. The joint rates thus constructed would be made to apply whether the traffic moved through Jacksonville or some other junctions.

Short Lines. The proposed scale rates were primarily intended for application to the standard lines, and, consequently, they could not be expected to apply to some of the smaller railways, because of their financial disabilities, due to their traffic and cost conditions. Several railways in Mississippi and Tennessee are in a "weak" condition, not necessarily because of the short length, but chiefly because they were constructed primarily for the purpose of carrying lumber. The lumber resource had already run short, and they have to wait for the future development of agriculture before their former prosperity is restored. In addition, there are still a number of short lines operating in the South - 306 independent railways with about 7,000 miles of track, most of which are small local carriers, about one-third being controlled by lumber companies or other industries. Even the longest, the Georgia and Florida, operating between Keysville, Ga. and Waco, Fla., has a total, branch lines included, of 405 miles of track.

Four different methods were proposed to meet the situation, as follows:

For short Lines in Georgia, South Carolina, Mississippi, Tennessee, Virginia and Louisiana. For lines with but one junction

through rates at local points would be made by combination upon the junction, the rates therefrom to be determined on the scale proposed to the Georgia Commission in 1921 by the short lines in that State. For lines connecting at more than two points with standard roads, through rates at local points, between any two junctions would be made by combination upon the lower rated junction, but without fourth-section violations as between the local points, resulting in the blanketing over the entire local territory the rate so made at the station nearest to the lower rated junction. The above-mentioned short line scale was arrived at by adding 30 per cent. to the rates submitted to the said Commission by the standard lines for 60 miles and under, and by adding 20 per cent. beyond 60 miles, the result thereof being the rate of 39 cents for the first block.

Another suggestion was that a joint scale be made for application over standard and short lines, by adding 30 per cent. to the proposed rates for the standard lines, plus first class arbitraries of 15 cents for 60 miles and under; 13 cents for 160 miles and over 60 miles; 11 cents for 260 miles and over 160 miles; and 9 cents beyond. However, this joint scale was to be used alternatively with the aforesaid combination basis, whichever gave lower rates.

For Short Lines in Alabama. The same plan would be adopted as the above, the only difference being in somewhat higher levels in the scales. The single line scale was arrived at by

adding certain per cent. to the rates submitted by the standard lines to the Alabama Commission in 1921, the rate for the initial block being 42 cents. The joint scale was determined by adding also certain per cent. to the rates submitted by the standard lines plus the same arbitraries as proposed in Georgia, with the further addition of an arbitrary of 6 cents for distances in excess of 300 miles.

For Short Lines in Kentucky. Some scales would be used, which would be higher than those to be in effect in Georgia.

For Short Lines in Florida. The same basis of through rates, constructed by the use of factors north and south of Jacksonville as was proposed by the standard lines would be adopted, except for the short lines in the territory north and west of the peninsula, for which the same bases as proposed for the short lines in the adjoining States would be used.

Classification Exceptions. Straight southern classification for all commodities would be adopted, to do away with the existing exception sheets, except in special cases. The few exceptions now general in their application throughout the Territory would be retained. The less-than-carload exceptions upon such articles as cotton, cotton sweepings, naval stores, cotton-seed hulls, cotton-seed, peanut, soya-bean oil cake, etc. would temporarily be left untouched.

(3) Extent of Fourth-section Relief

The primary object in view in the investigation was of course in the removal of the departures from the long and short

requirement, but the carriers had naturally to succumb to the force of competition which was entirely beyond their control. The relief from the fourth-section provision, which they would request in the event of the application of their proposed distance scale, was to the following extent:

1. To enable a circuitous rail line or route to meet the charges of a more direct line or route from or to intermediate points on its line, provided that the relief should not include intermediate points as to which the haul of the petitioning line or route was not longer than that of the first line or route between the competitive points; and
3. To permit the grouping with pivotal points of other points in recognized or established groups, or to permit the establishment of rates from or to other points made with relation to the rates from or to such pivotal points, without requiring the observance of the so-called equidistant rule.

Stated in simpler terms, the carriers desired the fourth-section relief for circuitous routes that were in competition with the direct routes, subject to the equidistant rule, and they also desired relief in some cases for direct routes, or for circuitous routes without the application of the equidistant rate, when necessary to avoid the disruption of established groups or relationships, the necessity for which will be illustrated as follows:

Proposed Rates to Atlanta:

Cincinnati	475 m.	$1.60
Louisville	463 "	"
Evansville	446 "	"
Cairo	488 "	"
Memphis	418 "	1.50
Greenville	458 "	1.60
Vicksburg	460 "	"
New Orleans	493 "	"

In the proposed scheme all the Ohio River crossings would be grouped in respect to traffic to the Atlanta sub-territory, in which Columbus is located. Columbus is about 115 miles farther from Cincinnati than Atlanta, but it is not more distant from Cairo than Atlanta. The Illinois Central and the Central of Georgia operate a route from Cairo to Atlanta via Columbus. If the equidistant rule were applied on this route, it would result in the disruption of the group relationship of the Ohio River Crossings at Columbus, or the inevitable exten-

sion to Columbus, 115 miles south of Atlanta, of the proposed rate of $1.60 from Cincinnati to Atlanta. The carriers wished to make the Columbus rate $1.75 from both Cairo and Cincinnati.

As regards relief for the short lines, the bases of through rates proposed were not always to be the actual rate bases, but to serve as maximum bases, from which it would be often necessary to depart to meet cross-country competition or other special conditions. Relief, therefore, might be sought to meet the rates of the standard lines at junctions, and as between groups of local stations. It might further be requested by them as intermediate carriers between standard lines.

(c) Interterritorial Rates

Whatever changes might be brought into the southern rate structures with a view to the construction of a scale of distance rates and the elimination of the fourth-section departures to a possible extent, the existing through rates that had been established interterritorially must be conserved if the trade conditions were not to be disturbed greatly.

(1) Central Territory

The general rate situation in respect of the fourth-section violation, that had prevailed between the Central and Southern Territories, will be outlined as follows:

The joint rates from the points in Illinois and the related points in Indiana to all the points in the Mississippi Valley were on the whole in conformity to the long and short haul

principle. The rates from the other points in the Central Territory to the Mississippi River points and the Gulf ports were mostly departures from the principle. So was the case with the rates from the Buffalo-Pittsburgh zone to many points in the Mississippi Valley and the Southeast.

It was attempted to conserve the existing relations and at the same time to remove as far as practicable those violations, as a rule by means of establishing through rates lower than the combinations from all the points in the Central Territory to the South. Under the proposed scheme of rates, most of the departures would be eliminated, but still in some cases they would be necessary, on account of the grouping and rate relationships in the Central Territory and the circuitous competition in the South.

Southeast. Rates from the Central Territory to the Southeast would be constructed upon the pre-determined key rate of $2.10 from Detroit, Mich. to Greenville, S. C. The same rate would be given to Atlanta, Ga., Birmingham, Ala. and Columbus, Miss. Chicago would be equalized with Detroit in this connection. In this proposed adjustment, New York was considered to be on equal terms with Chicago. As to the determination of the factor rates as far as the Ohio River crossings, the Chicago-Evansville rate would be made the basis. The proposed rate from Evansville, Ind. to Atlanta was $1.60. It would be deducted from $2.10, the result being 50 cents, about 56 per cent. of the local rate of 89.5 cents from Chicago to Evansville. The proportionals from the points in the Central Territory would be the

rates corresponding to 56 per cent. of their respective local rates to the nearest Ohio River crossings. To these factors would be added the proposed scale rates southward. However, for the sake of simplicity, the Central Territory would be divided into 59 groups, and the proportional from each was to be determined by applying the 56 per cent. basis to what was deemed its predominant rate to the Ohio River.

The prevailing rate of $1.63 between Chicago and Memphis, Tenn. was used to determine a second key rate from Chicago to Nashville, Tenn. Deducting therefrom the proposed Evansville-Nashville rate of $1.03 would leave 60 cents, which was 120 per cent. of the 50 cent difference between the Chicago-Atlanta and the Evansville-Atlanta rates. Therefore, 20 per cent. was to be added to the factors north of the River produced by the 56 per cent. plan, in making rates to Nashville and the points related thereto.

The southern classification would be applied to the proposed rates, and the rates below the first class would be made by applying the proposed percentage relationships.

Mississippi Valley. Rates would be built upon the rates from the Illinois Territory, the structure of which has been stated before, the other sections of the Central Territory to be divided into twenty groups for this purpose. The proposed rates were graded so that they might conform to the southeastern adjustment and the proposed structure from the East to the Mississippi Valley points.

Carolinas. The Virginia cities were used as basis in the making of the joint rates, except where the Ohio River basis resulted in lower rates. For this purpose, the Central Territory was to be divided into 57 groups to make the rates better graded in accordance with distance.

Florida. The factors applicable to and from Jacksonville for intrastate traffic, which has already been stated, would be used. They would be constructed in the same way between the Central Territory points and Jacksonville that the corresponding local rates were to be constructed, except that $1.60 would be used south of the Ohio River instead of $2.08.

(2) Eastern Territory

In the adjustment of the rate structure between the East and the South, competitive force between the all-rail and water-rail routes must always be the predominating factor. Generally, between the Eastern Territory and a very large portion of the Southern Territory, the water-rail and rail-water-rail rates have been differentially lower than the corresponding all-rail rates. The rates from the eastern ports have been related differentially to one another, the Baltimore rates being the base.

It was expected that on the proposed structure there would be little need for fourth-section relief at least in the South, but since there are two main routes open for southbound traffic, through Virginia cities and Ohio River crossings, there might be cases where relief would be necessary to meet direct route competition.

Carolinas. A structure would be constructed on the basis of the first class rates in effect prior to 1922, the proposed percentage relationships to be used for rates on the lower class traffic.

Southeast. The Eastern and Southeastern Territories would be divided into 12 and 16 groups, respectively, for the purpose of applying certain differentials. In the former case, the Baltimore rates were to be made the key. The differentials between the all-rail, water-rail, and rail-water-rail were also fixed. Generally, the relation between these rates and the rates from the Central Territory was given due consideration in the determination of groups and differentials.

Mississippi Valley. On the whole, the existing situation would be allowed to continue, in which both territories are each divided into several groups. As a result, the rates would be blanketed from a point south of Helena, Ark. along the Mississippi River, the Gulf throughout a broad strip of interior territory as far as the Apalachicola River in Florida is reached. From the Rochester, Albany, and New York groups in the Eastern territory, the rates would be the same to all points in the Mississippi Valley.

Florida. As in the case with the rates from the Central Territory, joint rates would be constructed on the factors north and south of Jacksonville. The basing factor from New York to Jacksonville would be $1.72, or 38 cents less than the local rate of $2.10, in contrast with the factor from the Ohio

River of $1.60, or 48 cents less than the local of $2.08. The basing factors from the other eastern ports and interior points could be determined, like their local rates, by reference to the New York Factor.

(d) Inconsistencies.

A scale of rates was thus worked out, which appears exactly to conform to the distance principle at least when it is traced on a diagram. As to the actual construction thereof, however, it was altogether based on arbitrary considerations quite intolerable from the standpoint of the theoretical distance principle. Moreover, as stated before, the scale was, as a matter of fact, to apply only to insignificant, non-competitive, traffic mostly within 200 miles of haul, the remaining part of the scale to serve merely as the maximum level of specific rates. All the more important relationships, which have been historically brought about as the result of competitive considerations, would be conserved, by means of the establishment of specific rates, the preservation of the grouping system, etc., and the only effect thereof on the whole situation would be the reduction of the number of the departures from the long and short haul principle.

(1) Specific Rates.

In order to avoid disturbances in the situation, all the rates existing between the pivotal points would be left un-

molested, and remain in the form of specific rates. Some of the consequent inconsistencies from the standpoint of the distance scale are as follows:

The rate of $1.45 was fixed for a single-line haul over 330 miles, on the basis of the prevailing rate between Cairo, Ill. and Birmingham, Ala., and this will be compared with some of the proposed specific rates.

Cair, Ill. - Birmingham, Ala.	single haul	330 miles	1.45
Cairo, Ill. - Chattanooga, Tenn.	joint haul	351 "	1.27
New Orleans, La. - Memphis, "	single haul	391 "	1.36
Cincinnati, Ohio - Jackson, Miss.	joint haul	417 "	1.38
Cairo, Ill. - Knoxville, Tenn.	" "	355 "	1.42
New Orleans, La. - Birmingham, Ala.	single haul	355 "	1.45
Richmond, Va. - Newbern, N. C.	single haul	331 "	1.00
Richmond, Va. - Sumter, S. C.	" "	332 "	1.25
Norfolk, Va. - Charlotte, N. C.	" "	349 "	1.12
Roanoke, Va. - Anderson, S. C.	joint haul	351 "	1.37
Richmond, Va.- Chester, S. C.	single haul	352 "	1.25
Norfolk, Va. - Charleston, S.C.	single haul	391 "	1.37
Norfolk, Va. - Denmark, S. C.	" "	393 "	1.48
Norfolk, Va. - Greenville, S. C.		457 "	1.37

From the Ohio River crossings, the rate of $1.45 would apply to points ranging from 297 to 425 miles.

The rate of $1.60 was fixed for a single-line haul over 460 miles, on the bases of the existing rate between the Ohio River crossings to Atlanta, Ga., 466 miles on an average, but actually this rate was to apply as specifics to points ranging from 383 to 514 miles joint haul from the Ohio River crossings. The rate of $1.37 from the said points was to apply joint haul to specific points 323 miles to 351 miles.

As regards shorter hauls, inconsistency was very remarkable in the following rates:-

Henderson, Ky.	- Nashville, Tenn.	single	haul	146 m.	.99
Evansville, Ind.	- Nashville, Tenn.	"	"	158 m.	1.03
Atlanta, Ga.	- Birmingham, Ala.	"	"	167 m.	1.15
Louisville, Ky.	- Nashville, Tenn.	"	"	187 m.	.99
Jeffersonville, Ind.	- " "	"	"	189 m.	.99
Nashville, Tenn.	- Birmingham, Ala.	"	"	205 m.	1.15
Atlanta, Ga.	- Nashville, Tenn.	"	"	288 m.	1.30
Cincinnati, Ohio	- Nashville, Tenn.	"	"	297 m.	1.18

(2) Groups

The distance scale would be all the more distorted through the continuance of the group system, with a view to the equalization of the depressed and subnormal specific rates to some farther distant competitive points with the higher but reasonable rates to some directly intermediate stations.

Groups would be spread back over long distances from Nashville and Chattanooga, Tenn. on traffic from the Ohio River crossings and beyond. Similar groups covering wide areas would be spread back also from the South Atlantic and Gulf ports. Further, there would be a number of smaller groups embracing local points with the junction points.beyond. The Ohio River crossings would be grouped in respect of traffic widely for the South. The Mississippi Valley points at important sections would be grouped into several units, and the Carolinas divided into five zones.

As the result of grouping, the rate of $2.08 would apply uniformly to traffic from Cincinnati, Ohio to all the South Atlantic and Gulf ports, from Charleston, S. C. to New Orleans, La. (Florida excepted), the distances ranging from 701 to 836 miles. The same rates would also apply to points which were to be blanketed 200 miles towards the interior from the coast.

The rates from the Virginia ports would be lower to the five zones into which the Carolinas would be divided, than the scale rates. The rates for the Mississippi Valley groups and also for the intermediate points between these groups, the rates for which would be graded between the group rates, would be lower than the scale rates. Richmond and Norfolk, and consequently other cities in Virginia would be given lower rates to many points in the Southeast and points in Tennessee. The rates from the Ohio River to Chattanooga, Nashville, Knoxville and other Tennessee cities would also be lower than the scale

rates, due to the blanket system extending over long distances. The rates from Cincinnati, Ohio, and Louisville, Ky. to the Mississippi Valley and also to the Carolinas would be materially lower. The rates from New Orleans, La. and Jacksonville, Fla. to many points would be greatly depressed.

The result of these specific rates and groups was the remarkably uneven progression of the actual rates throughout the Southern Territory. For instance, on the route from Cincinnati, Ohio to Chattanooga, Tenn. by the Southern, thence to Atlanta, Ga. by the Western and Atlantic, thence to Jacksonville, Fla. again by the Southern, the proposed rates were as follows:

Maximum scale rates	up to the first 330 miles till Glen Mary, Tenn. was reached, the rate therefor being $1.27
$1.27	uniformly for the next more than 200 miles, Chattanooga being blanketed therein.
$1.45 upwards	From Chickamauga, nine miles further than Chattanooga, up to Marietta, Ga., 9 miles nearer than Atlanta, Ga.
$1.60	Atlanta, Ga. and points grouped.
$1.70	The rate would jump up at the intermediate group between Atlanta and Helena, Ga.

$2.08 . . . . From Helena, Ga. up to Jacksonville, Fla. blanketed over 150 miles.

2. Shippers' and State Commissions' Schemes.

In addition to the system of rates proposed by the carriers, there were submitted to the investigation several schemes or opinions by certain shipping interests and State Commissions in the Southern Territory. All of them were constructed also on the mileage principle, with more or less of exceptions to meet the particular conditions and circumstances under which they were respectively situated.

(a) Southern Traffic League Scale

The scale of rates proposed by the Southern Traffic League was the most radical of all the other schemes produced for the pending adjustment. It was prepared on the following bases:

1. The cost of service might not vary with distance. Moreover it could not by any means be ascertained. Therefore, no system of class rates could or should properly be constructed by reference to the variations of the details of cost.
2. There was at least one standard readily available by which to measure and unify all class rates, and that was the basis furnished by the quantity of service rendered which was expressed in terms of mileage. In

other words, the amount of service as measured by the distance of haul furnished a definite yard-stick to which all charges could be made to conform without undue discrimination. Every community would then find its proper place automatically fixed by the accident of its location, and there would be no room for attempting to equalize natural advantages and disadvantages.

This plan seems to have been completely to sweep the economic forces out of the field of transportation, and is typical of what the proponents of the distance principle maintain. It is based on the belief that distance rates are the only panacea for all the "irregularities" in the tariff form, which are supposed to be intolerable evils to be eliminated.

Apart from the economic merits, the distance scale proposed was to apply uniformly throughout the Southern Territory, with certain minor exceptions of a very small number. The scale was constructed as follows:

1st block	1 mile	-	5 miles	$.27	(initial cost)	
2nd "	6 "	-	10 "	.05	(additional rate)	
3rd "	11 "	-	15 "	.04	("	")
4th "	16 "	-	20 "	.04	("	")
5th "	21 "	-	25 "	.03	("	")
6th "	26 "	-	30 "	.03	("	")
7th "	31 "	-	35 "	.02	("	")
8th "	5 miles			.02	("	")
⋮	⋮		⋮	⋮	⋮	⋮

(cont'd)

15th block	71 miles - 75 miles	$.02 (additional rate)
16th "	76 " - 80 "	.015 " "
17th "	5 miles	.015 " "
⋮	⋮ ⋮	⋮ ⋮
20th block	96 miles - 100 miles	.015(additional rate)
21st "	101 " - 110 "	.02 " "
22nd "	10 miles	.02 " "
⋮	⋮ ⋮	⋮ ⋮
36th block	251 miles - 260 miles	.02(additional rate)
37th "	261 " - 280 "	.03 " "
38th "	20 miles	.03 " "
⋮	⋮ ⋮	⋮ ⋮
48th block	481 miles - 500 miles	.03(additional rate)
49th "	501 " - 525 "	.03 " "
50th "	25 miles	.03 " "
⋮	⋮ ⋮	⋮ ⋮
60th block	776 miles - 800 miles	.03(additional rate)
61st "	801 " - 850 "	.03 " "
62nd "	50 miles	.03 " "
⋮	⋮ ⋮	⋮ ⋮

There was no limit to the above scale as to distance, 3 cents to be added to each block of 50 miles beyond 800 miles, while the carriers' scale terminated at 460 miles, over which specific rates would apply. If a line is drawn on the rates determined on this scale, it will show that the series of blocks is exactly the same in length as that in the carriers' scale, and that the level of rates grows lower as distance increases than the level of the latter's scale. As regards the specific rates proposed by the carriers for the points beyond the scale range, the level of the League scale is invariably lower than the

average of the specific rates.

For joint hauls, differentials were also proposed starting with 13 cents and disappearing at 500 miles.

As regards the limitations in the application of the scale, there would be a few exceptions. Between the Ohio River crossings and North Carolina, rates might be made under the influence of the trunk line depressed level in effect for the Virginia cities, but they should not exceed the amount arrived at by taking 80 per cent. of the combination of the first class rates on the Virginia points, the League scale to be used for the southern factor, and rates for the other class to be determined in accordance with the proposed standard percentage relationships. To points in Florida, exceptions might be made to some extent. It even conceded that no public interest would be served by splitting large industrial communities, such as Birmingham, Atlanta, New Orleans, etc., "into fragments because of relatively unimportant variations in distances as between different shipping and receiving points". The fourth-section relief might also be sought to meet the direct route competition. As regards short lines, joint rates would be determined by calculating the distance from the point of origin through to the point of destination, ascertaining the rate under the League scale for that distance, increasing such rate by 15 per cent., and then adding thereto the regular differential for the joint line haul.

The League scale appears on the face to be an ideal structure of rates in the light of the distance principle, but,

in the last analysis, it had, as a matter of fact, to recognize the exigencies of transportation and market competition in its application to actual cases. It was "flexible", as a spokesman of the scale puts it.

(b) Mississippi Commission Scale

A scale was proposed by the Mississippi Railroad Commission, which was constructed on the mileage basis to be applied uniformly through the Southern Territory. It did not differ much from the League scale. It was only a little higher than the latter on the whole. The State Commission objected to the grouping proposed in the carriers' scheme on the ground that the groups were too large and unfair to many of the smaller communities. However, it insisted on the conservation of some of the commodity rates and classification exceptions, for the reason that commercial conditions had long been adjusted to them, and that "any violent change would necessarily result in serious disturbance to the commerce of the State".

(c) Tennessee Commission Scale

The Railroad and Public Utilities Commission of Tennessee proposed two different distance scales, one to be applicable to the lower portion of the Southern Territory, and the other, which was somewhat lower in level, to the northern portion thereof - a "twilight or buffer zone" - bordering on the Official Territory. The difference in the scales was for the purpose

of meeting the varied financial and traffic conditions of the respective carriers.

(d) Eastern Interterritorial Rates

The Southern Traffic League proposed a partial extension of the League scale into the Eastern Territory over the water-rail routes. Water-rail rates from the eastern ports would be made on the basis of the League scale from Baltimore, with certain differentials to be added thereto. Constructive mileage would be used for the water-route distances in this connection. For the most part, the distances from Baltimore over water were to be calculated through Savannah, Ga. (constructive mileage 250 as against statute mileage 724.) In some cases, they would be calculated through Charleston, S. C., or through Norfolk, Va.

As regards all-rail rates, certain maximum rates were proposed, which were arrived at by taking 80 per cent. of the combination of the first class rates on Richmond, Va. or on the Ohio River crossings, whichever was lower, and grading rates for the lower classes on the standard percentage relationships. However, if the above-mentioned water-rail rates were adopted, the all-rail rates from the ports to the Southern differential territory would be determined differentially on the water-rail rates.

In connection with the proposed water-rail rates, the important port interests made suggestions for their own respective benefit. Boston desired to have the same rates as for New York, or if it should be differentially treated, the present dif-

ferential of 7 cents must be reduced to 5 cents over New York. New York contended that it should be given the same water-rail rates as for Baltimore, and if higher rates must be given because of a longer distance, the differential should be less than three cents, instead of the present 12 cents, over Baltimore. Philadelphia, now grouped with New York, insisted that it ought to be given a 6 cent differential under New York because of its geographical location, if New York was given 12 cents above Baltimore. Baltimore was opposed to the use of constructive mileage in the making of water-rail rates, particularly if this method was to be applied from New York.

(e) Other Proposals.

The North Carolina Corporation Commission attacked the carriers' scale on the ground that it would be too high. The criticism was particularly concentrated upon the proposed rates applicable from the Ohio River crossings and the Central Territory to North Carolina. The Commission's belief was that it would be more satisfactory to all interests to preserve the general system of grouping, rather than to adopt a complete system of mileage rates. Accordingly, several plans were suggested by the State Commission in respect of rates to and from the North Carolina Territory.

Shippers in Virginia were opposed to any scheme of uniform distance rates, on the ground that they were entitled to an absolutely favorable treatment because of their transportation conditions which were more advantageous than in any other

part of the Southern Territory. Suggestions were accordingly made in respect of the rates concerned.

The Ohio River cities were also opposed to the plan of uniform distance rates, and insisted upon the conservation of the traditional policy of basing through rates upon the combination of the local rates to and from the Ohio River crossings. They attempted to justify their position by numerous precedents and by reason that the transfer expenses at the Ohio River on through shipments were as great as the combined terminal expenses of an incoming and an outgoing local shipment, and that the proposed joint rates represented too radical a departure from the past practice, and would inflict great injury upon business interests on the Ohio River. Their proposal was, therefore, that the local rate from the points of origin to the nearest basing point or Ohio River crossing should be used as a proportional rate applicable to all other gateways, the classification applicable in that territory (instead of the Southern Classification in all cases, as proposed by the carriers) to govern, to which should be added the rate from the basing point to the destination.

Shippers at St. Louis, Mo. were also opposed to the rate structure proposed by the carriers, on the ground that it would prove prejudicial to it, and unduly favorable to Cincinnati, Ohio; Louisville, Ky.; and other Ohio River cities; and also of Virginia cities and other eastern points, because of relatively higher rates that would be quoted in spite of the traditional relationships and favorable conditions. Accordingly, they proposed through their Chamber of Commerce a scale of rates, which

covered a distance up to 1,000 miles on a somewhat lower level than the carriers' scale. It would disrupt the Ohio River grouping, and would place St. Louis approximately on parity with Cincinnati in respect of traffic to Alabama, and very much narrow the margin of the disadvantageous differentials for traffic to Georgia. St. Louis would be given lower rates than Louisville for traffic to the Mississippi Valley, and smaller differentials over Cairo, Ill. and Evansville, Ind. for traffic to the Carolina Territory. All-rail rates from eastern and Virginia cities to the South shall be based on the proposed mileage scale, water-rail rates to be fixed by the deduction of the established differentials from the above-mentioned all-rail rates, the result of which would be a heavy increase in the rates from the East.

On the whole, the St. Louis scale was designed to place the city in a much more favorable position than the Ohio River and the eastern points would be on the basis of the scale proposed by the carriers. It was, of course, strongly opposed to by the interest of the localities to be affected adversely thereby.

The Southern Ohio Group, consisting of the iron and steel producing centres, located near the point where Ohio, West Virginia, and Kentucky meet, had also a proposal to make in connection with the adjustment scheme in the Southern structure. The proposal was that these cities should be grouped for rate-making purposes, rates to be calculated entirely on the basis of a southern scale and a southern classification, in spite of

the fact that the group is located within the Central Territory. Relationships would be established under certain differentials between Cincinnati, Ohio and this group in respect of rates to the Carolinas. To the Southeast, the group would be split into two sub-groups in relationship to Cincinnati, but in respect of traffic to the Mississippi Valley, the group would remain as a single unit, to which a certain differential relationship would be provided for. Generally, since the average advantage in the matter of distance to the Carolinas, which the group had over Cincinnati, was greater than the average advantage in the distance to the Southeast, and about the same as its average disadvantage to the Mississippi Valley, the group should have a lesser differential over Cincinnati to the Southeast than the differential to be made under Cincinnati to the Carolinas, and also a lesser differential, in view of the length of the haul, to the Mississippi Valley.

The Railroad Commission of Florida opposed the carriers' proposal to draw an arbitrary line from River Junction to Jacksonville and to make rates for points south of this line on the combination of factors to and from Jacksonville, on the ground that the present transportation conditions in Florida were not so dissimilar with those in the other Southeastern States as to justify a higher scale of rates in the peninsula than elsewhere in the Southeast. The State Commission referred in its contention to the favorable conditions in Florida for railway operation and construction, and to the fact that the traffic and transportation conditions were not less favorable than the neighboring parts of Georgia and Alabama for which a lower level of rates

was proposed. In Florida, profitable fruits and vegetable tonnage had lately grown enormously and rapidly, and there was an equally profitable flow of passenger traffic to and from the peninsula during the winter months, to say nothing of the volume of traffic in lumber, naval stores and phosphate-rock originating in the State.

The Southern Interior Traffic Association, which covers all the important points of the interior western Tennessee and western Kentucky, urged that the mileage principle should predominate throughout the rate structure, with groups of the smallest possible size. The scale proposed by the carriers would be too high, and must be reduced by 10 per cent., or some different key rates must be employed in the construction of a scale of rates, so that a somewhat lower level of rates might be produced.

The Nashville, Chattanooga, Knoxville and Clarksville interests opposed the application of any uniform distance rate scale, on the ground that it would disregard differences in transportation conditions, unsettle business by disturbing the existing rate structure too radically, and complicate rather than simplify the consequent tariffs.

These Tennessee cities, however, proposed an adjustment in the present structure, in which the prevailing system would be largely conserved, and rates be adjusted in certain limited cases according to relative distances. The present rates from the Ohio River crossings to Nashville and Chattanooga would be preserved, with Knoxville rates made lower because of its

advantage in distance, instead of grouping these points as at present and as proposed by the carriers. In view of distance, the present Cairo-Chattanooga rates would be the basis of St. Louis-Nashville rates, with corresponding changes to Knoxville and Chattanooga. The carriers' proposed ratio from New York to Nashville would be reduced. Boston and New York should be grouped, as in the case of the rates to Louisville, Ky. The rates from Chicago to Nashville proposed by the carriers would also be lowered to the level as for Dyersburg which is somewhat nearer to Chicago.

However, small towns tributary to the above-mentioned cities favored the adoption of uniform distance scale rates, and contended that they should be given the advantage of their geographical locations and should not be blanketed in a group with the more distant, larger cities.

The Memphis shipping interests favored the adoption of a uniform rate scale, but, believed that the scale proposed by the carriers was too high. As regards rates from eastern and Virginia cities, they should be constructed to correspond to the trunk-line rates to the competing Ohio River cities and St. Louis. Water-rail rates lower than all-rail rates should be made to apply to points east, north, west and south of Memphis. In the opinion of the shippers, similar rates should be extended to Memphis.

The New Orleans interests were opposed to uniform distance rates, believigg that they would obstruct the free flow

of trade and the free play of competition. If a mileage scale was to be adopted at all, it should be confined to short hauls within 300 or 350 miles, and if it was to be extended over longer distance, the blocks therefor should be made very wide. Accordingly, the Mississippi River crossings should be grouped to a greater extent than proposed by the carriers. Memphis, Tenn. should be given an advantage in distance in respect of its business to northern Alabama, but New Orleans ought to enjoy some advantage over Memphis for traffic in Georgia. For this purpose, Georgia was to be divided into three zones; a northern zone where the average distances favored Memphis, a southern zone where the average distances favored New Orleans, and an intermediate zone where the distances averaged about the same. The intermediate zone would include Atlanta, although at that particular point distance favored Memphis somewhat, and to this intermediate zone rates from all the lower Mississippi crossings should be the same. To the northern zone, Memphis should have a differential over New Orleans, and vice versa in the southern zone. As regards Carolina rates, New Orleans and Memphis might reasonably have the same rates to much of the said territory, because of the long hauls involved. The proposed rates from eastern and Virginia cities, and also from the Central Territory were too high, and should, therefore, be reduced to a lower level lest the traffic should be diverted to the water lines to the detriment of the rail carriers.

The Vicksburg interests agreed with the New Orleans shippers on the whole.

The shipping interests of Charleston, S. C. favored uniform distance rates from Virginia cities to Carolina points. However, they were opposed to any rigid application of distance rates, particularly with reference to seaports, which distributed traffic brought long distances by ocean, and whose rates should be equalized. The limit of the application of any distance scale would be within a radius of 200 miles.

Savannah, Ga. took a different stand, and favored uniform distance rates, opposing the plan of making rates into Florida on the basis of the Jacksonville factors.

Mobile, Ala. was for a distance scale applicable uniformly, but complained of the disadvantages to which it would be subjected on the event of the adoption of the carriers' system of rates. In many cases, it did not give to Mobile the advantage of its geographical location.

Charlotte, N. C. favored uniform distance rates from the Virginia cities and North Carolina points to the Mississippi Valley, the Southeast and South Carolina, but opposed the adoption thereof, throughout all of the Southern Territory, on the ground that the peculiar conditions justified the zone system between the Virginia cities and North Carolina points. The shippers maintained that rates from the Ohio River crossings and beyond should be the same to Spartanburg, S. C. as to Atlanta, Ga., and that whether rates to Charlotte should be higher or

lower than to Spartanburg should depend upon the weight which would finally be given in the rate adjustment to the low-trunk-line rates to the Virginia cities.

Spartanburg, S. C. opposed the carriers' proposal and maintained that, in view of the distances from Cincinnati to Spartanburg and Atlanta, which are almost the same, they should be grouped together, instead of Spartanburg being included in a group of Georgia and South Carolina points and given a higher rate than to Atlanta, in respect of traffic from the Ohio River. The result would be lower rates to Spartanburg than to Charlotte and the points related thereto, from the Ohio River crossings, so that Spartanburg might be given an equal opportunity to Atlanta.

Abbeville, Greenville, Clinton, Seneca and other cities in the western portion of South Carolina contended that Spartanburg should be included in their group, in respect of traffic to and from the Ohio River crossings and beyond, instead of giving it lower rates, because of the fact that all the cities in this group had common interests, engaged chiefly in the manufacture of cotton goods.

Birmingham and Montgomery, Ala. believed that the adoption of some uniform distance rates was inevitable, if the basing point system should be discontinued.

On the whole, these proposals and suggestions made by State Commissions and shippers' associations are indicative of the fact that, if distance rates are to apply uniformly, they must be confined in the actual application thereof to non-competitive, short-distance - within 200 to 400 miles at the utmost -

traffic on standard lines, competitive forces to be allowed to play almost to the same extent as at present, and traditional relationships as between different centres of importance to be conserved without much disturbance. In other words, rates on traffic subject to transportation and market competition and those on weak lines will be made as required by economic principles, in the face of a uniform distance scale. They clearly show that if a rigid uniform scale is adopted throughout the territory it will result in the complete disruption of the trade conditions not only within the South, but also in the Central and Eastern Territories in connection with their relations with the Southern Territory. The time has not yet arrived for a strict uniform distance scale to be adopted, in view of the prevailing conditions, which no doubt have greatly changed from those requiring the basing point system in the early stages of the development in the South. The change will continue in respect of the transportation industry, market and population conditions, and in the not very distant future, the social and business situations will be so completely balanced throughout the territory, that the rate structure therein will adjust themselves approximately to what the distance principle requires, even without economically unnecessary pressure from outside entailing the destruction of the naturally developed economic structures.

E. Approved Distance Scale.

The distance scale proposed by the carriers was primarily designed to meet to some extent the recent tendency to-

wards conformity to the distance principle, but they were naturally reluctant to break abruptly with the traditional and historical relations brought about in the process of the operation of various economic forces relative to transportation rivalry, market competition and their revenue requirements. Consequently, a number of exceptions to the application if the scale were provided for in the shape of the limited distance covered by the scale, specific rates, groups, blankets, etc., to such an extent that the distance scale would in reality become a mere name, at least in respect of important, competitive, long-distance traffic. Attempt was made to conserve the old relationships, but they would inevitably be more or less affected by the introduction of the proposed scale, insomuch as a rate structure within a territory is highly organic and any artificial change, however slight and limited it may be, will be felt all through the system. Shipping interests were not at all satisfied with the probable effect of the scheme, in so far as their advantage which they had long enjoyed due to their natural locations was threatened.

Neither was the Interstate Commerce Commission satisfied with the rate systems proposed by the carriers, which were in fact merely "modivications in large part due to the force of competition, to the traditional and historical relations", which were very firmly embedded in the Southern Territory, and which it was felt by the carriers could not at this time be done away with. The Commission desired to introduce into the Territory the distance principle to the most extensive extent possible, in conformity to the policy materialized in the 4th section of the Interstate Commerce Act, and also the general trend in

the public sentiment which has undoubtedly been towards the more rigid application of the principle, although it admitted that the rates proposed were beyond question "a vast improvement" in many respects over the prevailing rates. The Interstate Commerce Commission, therefore, attempted to reorganize the carriers' rate system in the light of the distance principle, extracting from the various conflicting proposals of the carriers and others what appeared repugnant to the principle, and combining all the features deemed desirable to attain the long-wished-for object.

1. Fundamental Principles

The Interstate Commerce Commission started on a tremendous work on the assumption that the differences in transportation and market conditions were not so great as alleged to be by the carriers and interested parties, and that most of them might be totally disregarded in the construction of a logical rate structure without real disturbances of much importance. It was self-convinced that if there should take place some disturbances as a result of the application of a more rigid distance rate, they ought to be endured as a sacrifice in the interest of the improved general rate situation, or they probably would prove beneficial in the long run, in that population and industry would be diffused evenly throughout the Territory instead of being concentrated. The concentration of population and industry is a source of political and social evils, which should be removed by means of the adjustment of railway charges.

On the whole, the Interstate Commerce Commission proceeded on the belief that the local differences did not justify economically or socially the various schemes proposed, in which

much weight was attached to the preservation of the long-standing relationships, and that the time had matured for the radical revision of the rate structure on the basis of the distance principle.

However, the Commission had, at the outset, to take cognizance of the great difficulty in its task. The area to be covered in the investigation was the most extensive of all the areas within which adjustments of the similar nature had taken place before. The prevailing rate system in the area was the most complicated, and fourth-section violations and gross conflicts between the intraterritorial and interterritorial rates were quite numerous, on all which the economic status had long been settled. Moreover, a series of adjustments, which had formerly been made, were of a local nature, and did not serve much for the extensive purpose.

Minor differences must be entirely discarded, and a sweeping alteration was deemed absolutely necessary, based on a broader consideration, "however difficult of attainment it might be". To hesitate to interfere with the status quo, and build a crippled rate structure would not last long. The rate systems proposed by the carriers and others were not more than a patch-work. If the source of complaints as to discrimination relative to distance was to be extirpated, a radical and wholesale change must of necessity be brought about. Once a controvery was apparently set at rest, new and unexpected complaints often cropped out in other quarters.

From this attitude of the Interstate Commerce Commission, it is clearly seen that to introduce the distance principle is not at all based on any principle, but solely on a policy to avoid troublesome complaints, irrespective of economic forces and justice. The ultimate object in the attempt of the Commission was not to readjust the southern rate structure primarily on the distance principle, but to remove future complaints, no matter whether they are justifiable or not, and only for that purpose a scale of distance rates was to be devised as the only possible measure. The admission of the Commission of the fact that the task was immensely difficult implies that all the conomic principles and requirements must needs be ignored in order to take in the distance principle. However, whether the Commission could proceed on this conviction and fight the economic law throughout, or was obliged to surrender to it, is an interesting matter to be looked into.

First of all, the Interstate Commerce Commission set down several fundamental principles to act upon in the construction of a rate scale.

(a) Simplicity in Structure

Tariffs must be prepared as logical and simple as practicable. One of the notions underlying throughout the attempt at readjustment was the simplification of the existing very complex and almost incomprehensible tariffs, with numerous special classification exceptions and commodity rates, which had been the constant source of complaints of discrimination. Everything

was to be ironed out, so that rates might be ascertained with the least possible unnecessary trouble, for the purpose of both public regulation and practical convenience.

Therefore, the classification must first of all be standardized through the establishment of some reasonable percentage relationships between various classes. It was admitted that there was no mathematical formula on which to determine the percentages, but it was finally decided that 12-class system was to be adopted with certain percentages between the classes, the reasons being that, first, closer conformity should be brought about with the Official Classification because of the very intimate traffic relations with the Official Territory, and, secondly, the consolidation of the classifications should be facilitated by rearranging the existing Southern Classification along the common line with the other two major classifications. As a result of the revision of the classification, and the introduction of definite percentage class relationships, the numerous classification exceptions and less-than-carload commodity rates would be practically eliminated, and the conversion of the less-than-carload traffic into carload would be encouraged to the benefit of both carriers and shippers. However, there might be cases where special competitive conditions would require some limited number of exceptions to the general rule. As regards the quantity ratings, they would be totally eliminated, for the steamboat competition, which was originally responsible therefor, had practically disappeared.

(b) Disregard of Differences in Carriers' Financial Conditions.

Whatever scale of rates may be devised, each of the carriers concerned must derive from its operation a certain amount of revenue, if it is to live. The financial situations and requirements of the railways in the South still vary greatly according to the size, location and traffic conditions of the systems. A uniform rate system would result in the unreasonably high level of revenue for the stronger carriers and in the unlawful deprivation of property rights for the weaker and smaller roads. However, as a result of the public sentiment for the necessity of coordinated railway service having been enacted in 1920 in Section 15a, Paragraph (5) of the Interstate Commerce Act, with a view to bringing about territorial uniformity in rates, the various railways would sooner or later be grouped through consolidation or otherwise, so that a uniform rate scale might produce profits fairly evenly to all the carriers concerned. Moreover, uniformity in rates would prove a stimulus to the consolidation of the railways of varied financial conditions into desirable systems of a limited number.

Therefore, differences of minor importance existing in the financial and traffic situation of the carriers should be largely disregarded, and some protection was to be afforded only to those carriers which would be absolutely unable to continue their operation under a uniform system without seriously impairing their corporate status, pending the grouping thereof with the stronger carriers.

(c) Diffusion of Population and Industry

Apart from the fact that population and industry tend to concentrate on such points as are favored with natural advantages, and also that the railway charges to such points are favorably made not by the carriers concerned but under the pressure of the economic force, the concentration thereof is believed to breed social and political corruptions. The Commission desired to break up the concentration by adjusting the rate system and diffuse them evenly throughout the Territory.

The policy in this connection was that, since economic rates would encourage the concentration of population and industry, and suppress the opportunity of development or at least retard it in less favored localities, they should be replaced by the rates which were designed to counteract the effect of natural advantages and economic forces, so that "legal and moral evils" attendant upon concentration might be avoided. As a matter of fact, however, the group system of rate-making often proves to be of service in dffusing industry and population evenly within each group, and distance rates tend to concentrate them at the points which are advantageous in respect of distance, contrary to the idea entertained by the Commission and others.

(d) Harmony between Intrastate and Interstate Rates

The scale which would be constructed in this investigation applicable to the interstate traffic must be framed, so that it might be made applicable to intrastate traffic as well. Else recurrence of the Shreveport case would be unavoidable. Therefore,

considerations which appeared to be purely intrastate must also be taken fully into account in the making of an interstate rate scale.

(e) Coherence and Consistency

Irregularity in a new system must be reduced to the minimum, and the inconsistencies referred to elsewhere ought to be avoided, so that coherence and consistency should prevail throughout the rate structure. Any rate that did not conform to a scale would be unreasonable, and, therefore, intolerable. Once a scale was determined, departures must be confined within absolute necessity, and sometime in the future the economic conditions would be brought to conform to the rate structure.

The policy in this regard was that railway rates should be so made as to control the economic situation, instead of their being controlled by the economic law.

(f) Disregard of Competitive Force

From the economic point of view, the distance principle is impossible wherever the force of competition operates in full swing. The competitive transportation conditions have lately undergone a great change in the Southern Territory, but still market forces remain in effect in the rate situation. If a distance scale was to be adopted more extensively, the competitive force must of necessity be disregarded pretty thoroughly. While the Interstate Commerce Commission admitted that competition was responsible for the basing point system, here it condemned the

rate system because it was not based on any scientific principle, but it was "the product of the efforts of the freight traffic managers seeking a maximum revenue for their respective railways, modified to some extent by public regulation." The Commission did not undertake to explain what a scientific rate structure should be, and why it was condemnable for the railroads to seek a maximum revenue, but hastened to assert that the distance principle should, therefore, be adhered to more closely. However, it seems on the whole that any departure from a distance scale is not scientific, and therefore, it ought to be done away with.

(g) Dependence upon Cost and Value of Service

The Interstate Commerce Commission throughout stuck to the belief that a distance rate scale was justifiable from the standpoint of the cost and value of service. It assumed that cost increased with distance. Therefore, rates should vary according to distance. However, it admitted the fact that the cost might be lower for a longer than for a shorter haul on the same line over the same direction under the same conditions,when a different train was used. However, it adhered to the idea, on the ground that, if this fact was to be taken into consideration, a distance scale could not be constructed. Rates might vary with "the line, the train, the day, and the state of the thermometer", but the Commission maintained nevertheless that it must be taken for granted that cost increased in proportion to distance. It also acknowledged the fact that cost was impossible of ascertainment, but it did not matter with the Commission.

The Commission attempted to justify the distance principle also on the ground that rates should vary exactly according to the amount of service rendered, and the only measure thereof was distance.

All these contentions seem to have been advanced by the Interstate Commerce Commission in its eagerness to support the extensive application of the distance principle, but they are highly illogical. The distance principle can never be defended on a scientific and theoretic basis.

(h) Limitation of Group System

The Interstate Commerce Commission was naturally not satisfied with the group system proposed by the carriers and others. In its opinion, there was no inherent commercial conditions prevailing that justified the proposed system, but it was primarily intended for the purpose of revenue conservation and convenience. It was entirely arbitrary, based on no definite plan. There remained no commercial needs that required the proposed group system. It was chiefly due to competition which had been greatly modified by consolidation and other forms of railway union, and the changes in industrial situations. It was contended by the Commission that, in the last analysis, the carriers were motivated by their reluctance to disturb the existing conditions too radically and to break with the past too suddenly.

There would not be real disturbances of any serious consequence if a sweeping alteration was introduced, as had been evidenced by the past experience where adjustments broke the traditional groups completely. Therefore, the group system must be reduced to a minimum, if it should be found still necessary to retain it, by sufficiently extending the length of a scale to cover all the hauls, and by eliminating the prevalent practice of keeping up some rates to cut others.

However, it was admitted on the other hand that group rates were defensible in the case of the commodities which were produced only at certain points or in restricted localities, where commercial conditions would be improved by common consent by the equalization of the points or areas of production. Groups and differential relationships might also justifiably be created in cases where they would bring traffic into competitive markets at relatively low rates without undue preference. But this admission by the Interstate Commerce Commission was ambiguous, and there is no drawing a line of demarkation between this limit and the grouping proposed by the carriers. It is only a question of degree. The groups and differential relationships, which had long been established, were based on exactly the same economic reasons. The policy was merely to narrow the limits of the existing or proposed relations.

(i) Elimination of Joint-Line Differentials

The establishment of joint-line differentials was proposed by the carriers, on the ground that joint-line cost was higher than single-line cost because of the extra expenses involved in the switching operations of carload cars and the transfer from car to car of less-than-carload traffic at junction points. However, it was rejected for the reason that no attempt had ever been made to estimate the alleged extra cost, that the proposed differentials were the product of unguided judgment, and that traffic did not always incur extra handling or operation at junctions. Since through traffic did not materially differ from local traffic in this regard, no differential should be made for a joint-line haul.

2. Construction of Scale

The scales of rates with exceptions thereto in respect of specific rates, groups, blankets, etc. proposed by the carriers and others, were condemned by the Interstate Commerce Commission as illogical, unsystematic and arbitrary, although the system based on them was far better than the prevailing system, and the Commission set about the construction of a structure which it deemed more scientific. All the contentions advanced by the Commission in its criticism were based primarily upon the rigid idea of the distance principle as generally discussed abstractly and academically. However, in the actual construc-

tion of a scale of rates and minor parts of the structure, the Commission had to admit a considerable amount of difficulty in the way of the application of its distance principle, in spite of the fact that it was quite prepared for the sudden and violent break with the past and also for the total disregard of economic forces, as discussed previously.

(a) Inconsistency in Commission's Ideas

The result of the time-consuming, exhaustive investigations has been a distance scale with certain fundamental rules for the application thereof, to be carried into effect on July the first of the present year, which will undoubtedly be not a little disillusioning to the believers in the sacrosanctity of what they call the distance principle. The Commission attempted to work out a scale on a theoretical basis, and, upon its failure, it had to say that there was to be found absolutely "no mathematical formula" on which to build a rate structure, and that it was impossible to devise a system "in any less arbitrary way" than the one proposed by the carriers.* It disapproved of the carriers' system on the sole ground that it was arbitrary, but its own scale was no less arbitrary. The scale finally approved after many months of painstaking studies was in effect a scale built promiscuously upon the various proposals of the carriers and others with some modifications. The original level of rates was lowered a little, because it was too high and would

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*(P. 631, Southern Class Rate Investigation).

produce more revenue than at present; the length of the proposed scale was extended indefinitely, because it was too short; and the proposed groups and differential relationships were largely discarded, because they were mostly unreasonable. There is no novel feature in the Commission's own scale and the rate structure built thereon, and the failure in the theoretical application of the distance principle was ascribed by the Commission to the "lack of cost data."*

Illogicality and inconsistency are traceable in this excuse. Elsewhere the Interstate Commerce Commission admitted, in its attempt fo find out a yard-stick to measure the railway service with a view to grading charges therefor, that the cost of service did by no means constitute a valid basis to justify the distance principle, for it would "vary with the line, the train, the day, and the state of the thermometer", and the cost principle was in this way discarded. Here it stated that if cost data had been available, a more logical distance rate scale would have been possible. Here it laid the blame on the lack of cost data for its failure to live up to its theory, stating that cost accounting was not science, which had been developed or applied extensively in the railroad practice.

The Commission had, therefore, to construct a system using certain key rates, and building a scale around these rates,

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* P. 631, Southern Class Rate Investigation.

a practice which it criticized as illogical in the disapproval of the carriers' scale. In the last analysis, the scale of rates, which was finally approved and adopted, was not by any means the result of the application of the distance principle, but a system of rates in which rates were arbitrarily made to progress with the distance of haul, so that the whole scheme might have an appearance of a rate structure built according to the requirements of the principle.

(b) Bases of Construction

The approved scale of rates was largely based on the compromise between the various proposals made by the carriers, shipping interests, and State authorities on the one hand, and the Commission's policy on the other, which had been growing more rigid in the application of the distance principle as an absolute measure to suppress complaints of discrimination likely to arise constantly so long as economic rate structures prevailed, no matter whether such complaints were economically grounded or not, and therefore, the construction of its scale was based on some hypotheses, in respect of the tapering nature of rates, the degree of the progression of rates, the general level of rates, and, lastly, the territorial uniformity in rates.

(1) Tapering Nature of Rates

Apart from individual cases, it was broadly supposed that rates per ton per mile should continually decrease as distance grew, as is generally taken for granted in the distance

principle. This supposition can never be proved satisfactorily, as has already been discussed. However, the reasons given therefor by the Commission were as follows:

First, terminal cost remained constant under any conditions and circumstances per unit of traffic, and, therefore, even if line-haul cost increased uniformly with distance, the total charge would logically decrease per unit of distance per unit of traffic, as distance increased, because of the thinner spread of the uniform terminal cost over longer distance, as discussed elsewhere. In this connection, the constancy in terminal cost has already been put to test in the course of the preceding discussion.

Secondly, line-haul cost would decrease per unit of traffic, as the length of haul grew, because short-distance traffic was generally moved by way trains, which were operated locally and irregularly, while longer distance traffic was mostly carried by through trains, which were run on regular and through schedule, without many stops en route except at larger centres, and, consequently, the operation of which cost much less than in theccase of the former per ton per mile. It was disclosed that traffic of less than 75 miles was largely carried by way trains, and traffic of more than 150 miles mostly by through trains, traffic between 75 and 150 miles being moved partly by the former and partly by the latter service.

The logical conclusion from the above fact was that the cost per ton per mile must continuously decrease with distance, although longer-distance haul might necessitate more fre-

quent transfers en route. This supposition has also been fully discussed previously, on the basis of line-haul cost being impossible of ascertainment and variable very widely under diversified conditions and circumstances.

Thirdly, line-haul cost must decrease per unit of traffic as distance increased, because of the fact that carload commodities increased in volume as the distance of haul grew. It was supposed in this connection that terminal and line-haul costs were much lower per unit for carload traffic than for less-than-carload merchandise. This hypothesis is true only in the case of handling both kinds of traffic under exactly the same conditions and circumstances.

As a matter of fact, however, there is never such a case, but conditions and circumstances constantly vary according to traffic, time, and places. The terminal and line-haul costs for a consignment of three tons of coal is not in most cases smaller than for a consignment of 25 tons of the same traffic handled at the same time, at the same terminals, and moved by the same train over the same section of a line.

(3) Progression of Rates

It was first of all assumed that rates per ton per mile should continuously decrease with distance, because of the general hypothesis that cost diminishes as distance grows, and the next step was shown to determine the actual line of progression in such a way as to meet the predetermined cost idea and the value of service concept.

First, as regards the rates for the first 75 miles, the charges, which constituted the rates, except the terminal cost, should be uniform per unit of traffic per unit of distance, because the line-haul cost was relatively greater owing to the use of way trains, and also because short-distance traffic could bear a comparatively heavier burden from the standpoint of the value of service. The rates per unit were to taper slightly as the result of the combination of the uniform share in the line-haul, and the joint costs, and the constant terminal cost for any length within 75 miles.

Secondly, the rates per unit for the intermediate length showed decline to a remarkable degree, because the line-haul cost would supposedly diminish sharply after 75 miles on account of the use of through trains and the greater volume of carload traffic, and also because the value of service would require as low rates as possible.

Thirdly, as regards long-distance rates, the line of rates should be almost horizontally straight, with larger blocks of mileage and greater diminution in per unit rates, because of the nature of cost and, also of the desirability of expanding the area open to transportation, by means of keeping the line of rate progression below the line of the value of service as far as possible.

These bases do not rest on any scientific calculation, but are justifiable for practical purposes. There would be no other way of determining the curve of rates in the construction

any distance rate scale.

(3) General Level of Rates

The distance scale and the rates constructed around it, as proposed by the carriers, were so designed as to maintain on the whole the prevailing levels of revenue. The Interstate Commerce Commission's contention was that the lower the level of scale rates the fewer would the exceptions be, and, therefore, that in order to introduce the distance principle as closely as possible the level of rates should be as much lower as possible than that proposed by the carriers. Thereby, the exceptions in the form of commodity rates, which were deemed by the carriers absolutely necessary, would be largely eliminated. A lower level might adversely affect the carriers' revenue situation to some extent, but the unfavorable effect, if any, would be greatly offset by the advantage in competition with motor transportation particularly in the case of short-distance traffic.

Therefore, for the double purpose of eliminating a large number of the proposed commodity rates, and enabling the railways to hold their position against the encroachment of motor carriers, the level of rates should be somewhat lower than that proposed by the carriers. However, just where the level should be drawn could of course never be scientifically determined as required in the distance principle, but, as a matter of fact it was fixed arbitrary mid-way between the level proposed by the railways and those proposed by the shipping interests, which were far lower than the former.

The deficit, which was apprehended by the carriers in their revenue on the basis of the approved scale, would not be so serious as to threaten their financial conditions, according to the calculation of the Commission, owing to the general abolition of the rates which have been depressed because of the traditional forces of competition, most of which is, in the Commission's opinion, not real and controlling, but merely imaginary.

How the approved rate system will affect the carriers' financial situation and the general economic conditions in the South remains yet to be seen. There is no reliable forecasting whether the prevailing rate structure is actually unreasonable and inconsistent, and the reconstruction thereof on the basis of the approved scale will not seriously disturb the railway and trade conditions, as optimistically believed by the Interstate Commerce Commission. In other words, what good or harm the distance rate scale will do in the South in relation to the industry, population, the general public, and the carriers can be determined only after it is actually put into operation.

(4) Territorial Uniformity in Rates

In the opinion of the Interstate Commerce Commission, the local characteristics in respect of industry, trade, distribution, population, traffic, carriers financial conditions, etc. did not justify sufficiently the provision of so many special treatments as proposed by the carriers, but a single scale of rates should be made to apply as extensively as possible

throughout the territory. As regards the population and the economic aspects of the question the approved distance rates were supposed to result in the long run in the diffusion of what had long been concentrated at particular points of natural advantage, so that balance would be brought about to the ultimate benefit politically, socially and economically. In point of fact, the distance scale was designed to counteract the effect of the economic law. As regards the diversity in the carriers' conditions, the Commission believed that the recapture provision in the Transportation Act of 1920 would effectively take care of the difference arising in the revenue of the different carriers from the uniform application of the approved rate scale. Moreover, the territorial uniformity in rates would facilitate the desirable movement for consolidation, as contemplated in the Act, to the benefit of the carriers themselves and the general communities.

Pending the thorough unification of the various railways into a fewer large systems, however, it was admitted that some measures should be provided for certain limited railways to meet the serious situation to which they would otherwise be reduced by the uniform application of the scale rates.

As regards the principal main lines, there was, on the whole, no clear difference of sufficient importance shown in respect of the traffic densities, costs of construction, or operating difficulties, between the different main lines nor between the main and branch lines, that would necessitate difference in the rate levels applicable thereon.

(1) Rates for Initial Distances

The determination of rates for the first stage of distance, from which to start the scale, was no less arbitrary than in the case of the carriers' scale which was condemned as grossly arbitrary. The initial level of rates proposed by the carriers was adopted by the Interstate Commerce Commission without the least modification, not because it was satisfied with it, but because there was no other way available "for the time being", and it was deemed "none too high" for the 1st Class Traffic if lower rates to be given to other classes were to be taken into consideration.

Thus, the initial rate for the first class was determined at 30 cents per 100 pounds.

The bases, on which the carriers fixed this 30 cent rate, were regarded as arbitrary and inadequate. First, the cost studies carried out by the railways were based on the supposition that 90% of the entire traffic was being handled in less-than-carload service, and, therefore, the studies were effected solely on the less-than-carload traffic. In the opinion of the Commission, however, the proportion of this class of traffic was substantially less than 90% of the entire business, except in the case of the traffic originating from jobbing centres. Moreover, as explained before, a new scale would be so constructed as to encourage carload consignments, for the purpose of economy in operation, and in the failure, consequently, the proportion of less-than-carload traffic would be still smaller. Therefore, the level determined on the basis of the cost for less-than-carload merchandise, which was higher than that for carload must be unreasonably high.

Secondly, the determination of the switching cost on the basis of the number of the respective cars was quite unreasonable for the reason that the switching of carload cars on industrial tracks involved, as a rule, longer and more complicated movements than merchandise cars on freight house tracks. Hence, the cost of the former service was generally greater than that of the latter.

In the case of the time basis, which was also employed by the carriers at certain stations, no allowance was made for the lighter loading of merchandise cars. The cost of switching of a car loaded with 4,000 pounds was different from that of a car with 90,000 pounds of goods in it.

The basis of computing each less-than-carload car as four cars was deemed also arbitrary. The cost, therefor, was not always greater by four times than the cost of switching a carload car.

Thirdly, in the allotment of the clerical cost, the carriers did not differentiate between the smallest shipments of merchandise and the largest and most valuable consignments carload traffic. The result was that the less-than-carload traffic would have to bear the greater part of the entire clerical cost.

Fourthly, according to the method employed by the carriers in the determination of the share for the less-than-carload traffic in the return on the value of the station property, from 99.1% to 99.7% of the station facilities would be assignment to this kind of business, 0.9% - 0.3% only being used for the handling of the carload traffic. This would be very unfair for the

merchandise traffic, and, therefore, some other basis should have been employed in this connection.

Fifthly, the number of stations selected for the purpose of determining the terminal cost with a view to fixing the initial rates was too small and limited, as well as the two-week period during which the studies were made, to arrive at an accurate and reliable cost basis. Moreover, the methods of computation were not standardized and uniform, varying from station to station.

The conclusion of the Interstate Commerce Commission in this relation was that a dependable cost basis could never be secured unless the Commission itself had carried out a very extensive investigation at many more stations under more diversified conditions over longer periods for both carload and less-than-carload traffic.

Finally, however, the 30-cent level was adopted for the reasons above referred to.

(3) Rates for Succeeding Distances

Now that the starting point, with which the scale was to commence, was thus fixed, the Interstate Commerce Commission had to determine the curve of rates for the succeeding distances of haul, but here, unfortunately, it failed to proceed in logical sequence.

Because there was no line-haul cost figure available, it was "necessary to be guided, to a considerable extent, by the proposed rates of the carriers and shippers, and also by the existing rates within the Territory".

20th block	96 miles - 100 miles	$.02	(additional rate)
21st "	101 " - 110 "	.03	" "
22nd "	10 miles	.03	" "
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.	.	.	.
25th block	141 miles - 150 miles	.03	(additional rate)
26th "	151 " - 160 "	.02	" "
27th "	10 miles	"	" "
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34th block	231 miles - 240 miles	.02	(additional rate)
35th "	241 " - 260 "	.03	" "
26th "	20 miles	"	" "
.	.	.	.
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62nd block	781 miles - 800 miles	.03	(additional rate)
63rd "	801 " - 825 "	"	" "
64th "	25 miles	"	" "
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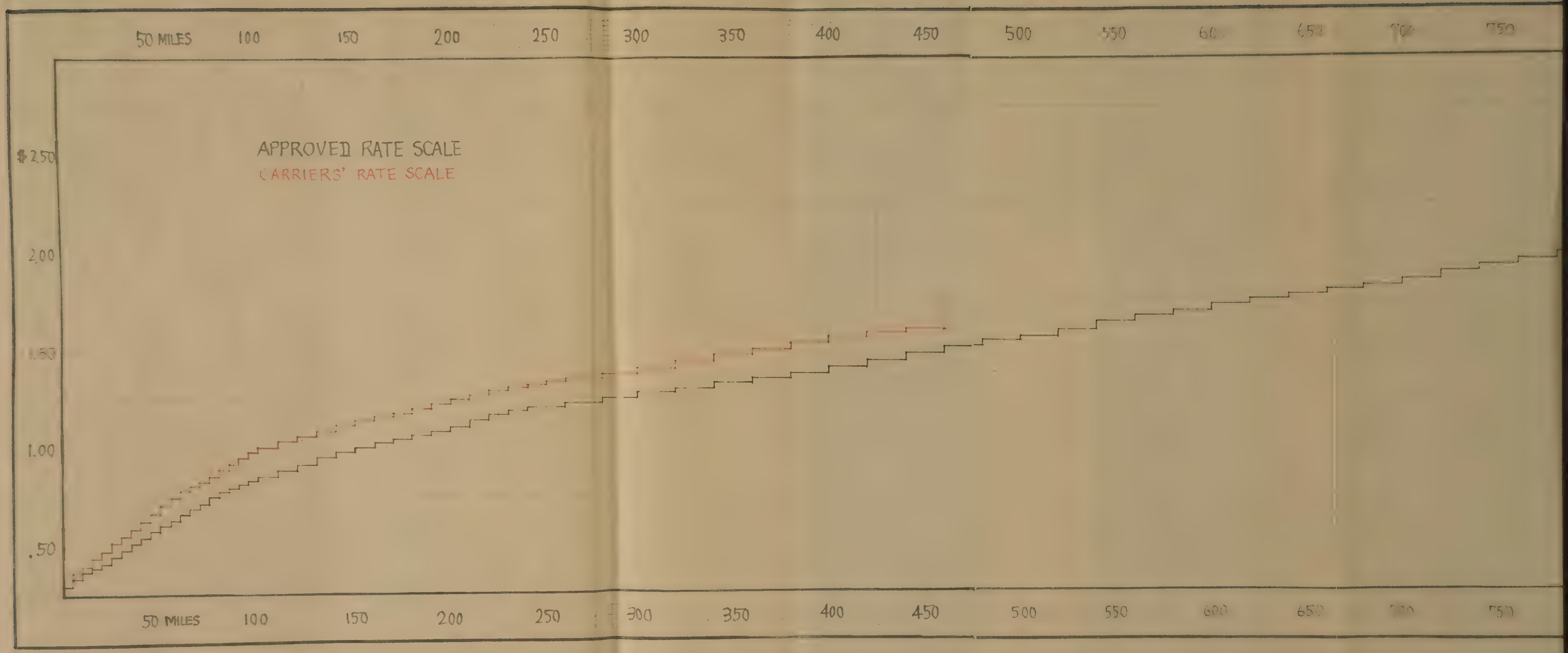
(to continue indefinitely)

(d) Determination of Mileage

The logical requirement of the distance principle is that the distance of haul, on which the scale of distance rates rests, should represent the actual mileage on which carriage is effected, or else the distance rates will be reduced to a mere name as in the case of the distance scales in the Central Freight Association Territory. However, if the distance principle is carried rigidly and theoretically, a longer route between any two points would lose their entire traffic to the shorter route, other things being equal, and the result thereof would be the compulsory retirement of the disadvantageous route from the business.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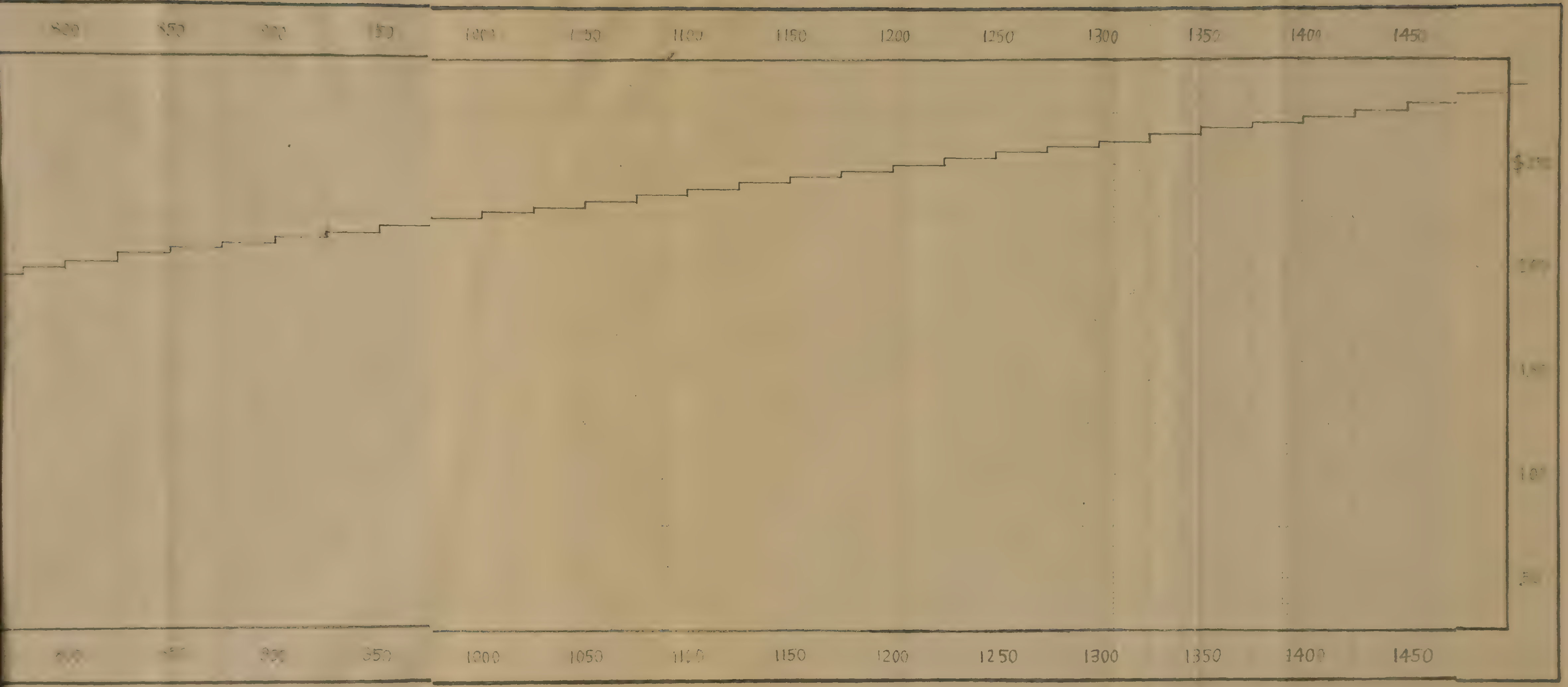
APPROVED RATE SCALE
CARRIERS' RATE SCALE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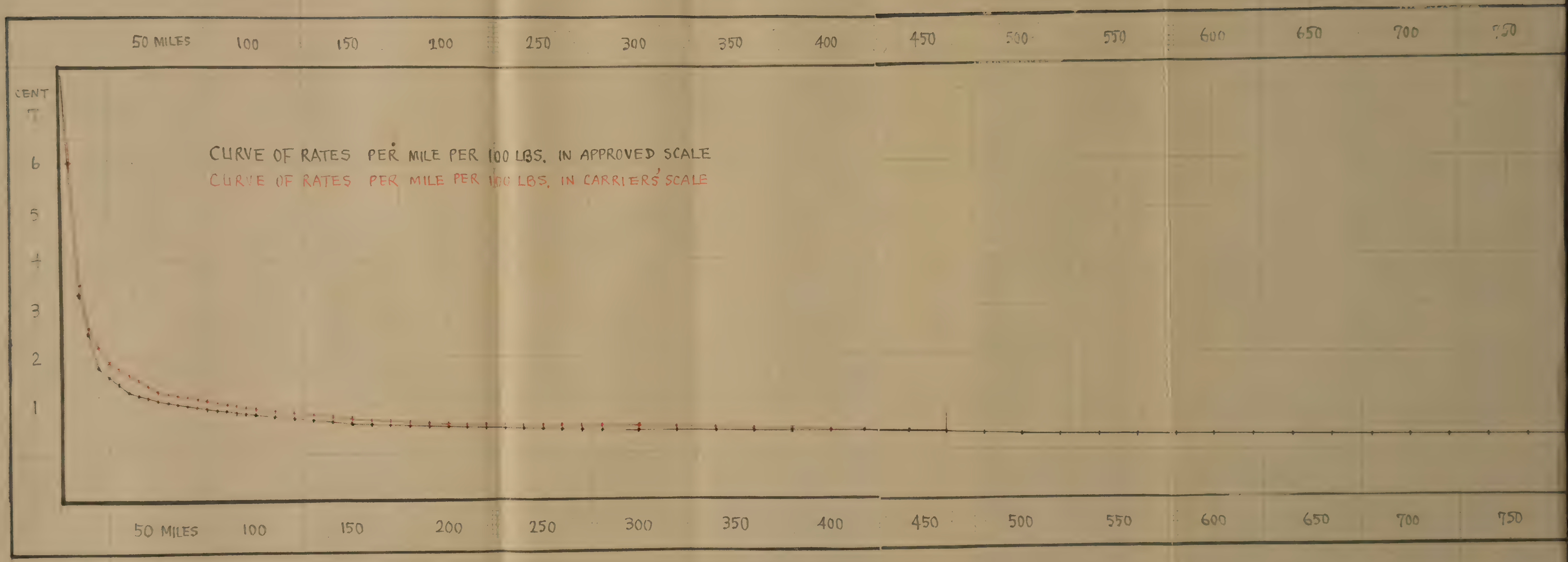
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CURVE OF RATES PER MILE PER 100 LBS. IN APPROVED SCALE
CURVE OF RATES PER MILE PER 100 LBS. IN CARRIERS' SCALE
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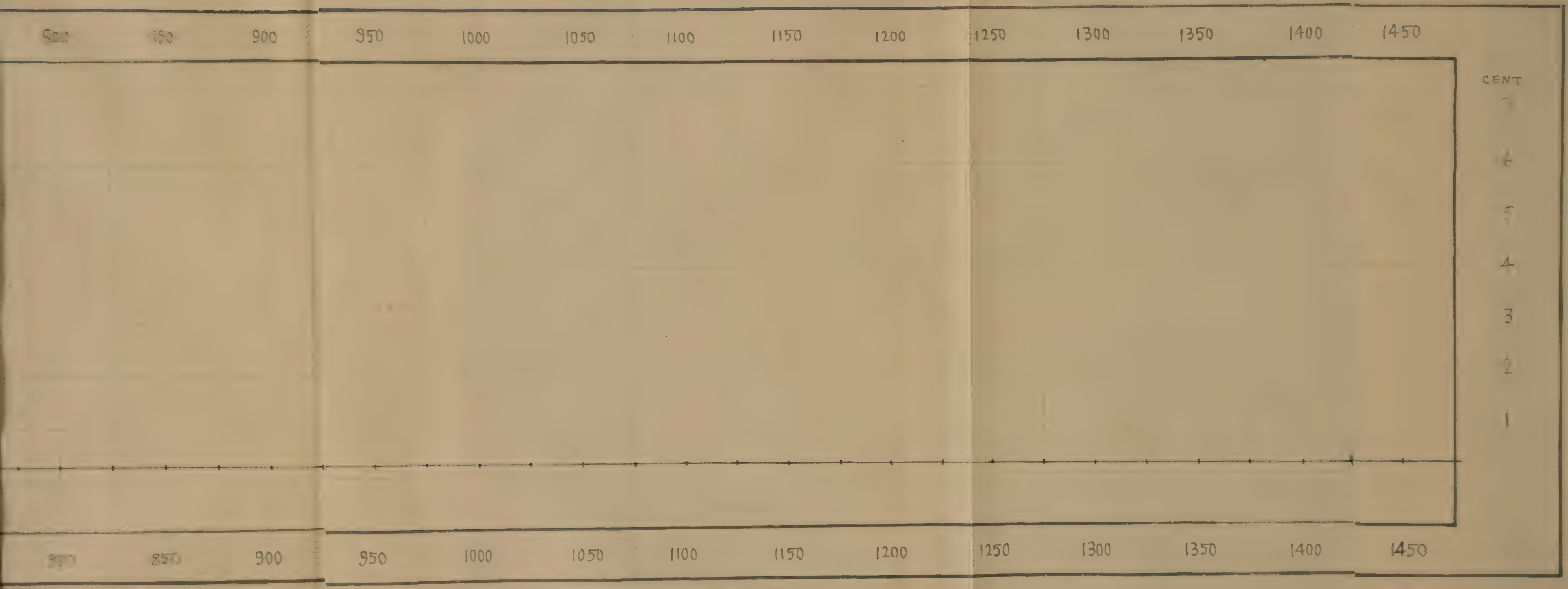
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The shorter route would monopolize the traffic situation between the two points, driving out the longer route from the legitimate participation in the traffic. The railway would suffer from the decrease in its revenue, and the communities served by it would also be unfavorably affected through the inevitable increase in the rates upon them, or if it is not possible under a uniform rates system, through the ultimate withdrawal from service. In the case of these different routes belonging to the same system, the result would be the congestion on the shorter route between the two points, to the detriment of the railway company and the public in general.

Even in the strict application of the distance principle, therefore, some measures must be provided to relieve this harmful effect. In the approved plan, it was decided that the calculation of the distance between any two points, where there were more than two routes of different lengths in operation, would be based on the actual mileage on the shortest possible route, the distances on the longer routes to be equalized therewith. The difficulty in this connection is that the shortest route cannot always handle all traffic between the two points owing to its physical and other conditions, and, therefore, such route ought to be disregarded in respect of this matter. The shortest workable route must instead be made the basis of computation in such cases as the above, but as it was practically impossible to differentiate clearly and definitely in each case between the possibility and workability of the shortest route, it was decided that the shortest-possible-route principle was adopted.

Another important problem in this connection was how to prevent the waste of transportation due to the participation of excessively circuitous routes in the business between two points, If the distance scale is to be adhered to as closely as possible, a stop must be provided somewhere. However, this question will be dealt with in the light of the Commission's policy which has been in practice for years, as discussed elsewhere.

As regards the determination of what constitutes the shortest route, the Interstate Commerce Commission followed the practice hitherto in use, and it provided that for the interchange of carload traffic the lines or parts of lines of not more than 3 carriers would make the shortest possible route between any two points up to 200 miles, 4 carriers from 200 to 500 miles, and 5 carriers for greater distances.

However, where shorter routes are now in use which embrace the lines of more than the specified number of carriers, such shorter routes will be used notwithstanding the above provision. Of course, connecting lines under common ownership or control shall be considered as a single line, but disconnected portions of the same railroad system shall be counted as separate lines in this connection.

(e) Revenue Test

Whatever the rate structures may be, carriers must of necessity obtain certain levels of revenue therefrom. The result of this test of the approved scale on the traffic of 1924 was that on the interstate class traffic 3.05% would decrease in

the revenue, on the grain and grain products 8.78% would decrease, and on the other traffic moving at commodity rates 15.7% would decrease, the total decrease to be 5.45%. It was expected however, that the uniform scale would be applied also intrastate, and then the total decline in the revenue would be lessendd to 1.35%. However, the above calculation was made on the basis of the constructive distances of 90% of the actual mileage on the lines in Kentucky, Tennessee, North Carolina, and Virginia, and of 110% of the actual mileage on the lines in Florida. But in the approved plan, the actual mileage basis would be generally adopted, with arbitraries for the Florida lines, and the short and weak lines would be treated favorably. Therefore, the application of the approved scale would, in the opinion of the Commission, not materially affect the revenue situation of the carriers concerned.

3. Limitations in Application

No matter whether or not distance rates are constructed logically and scientifically, the question as to how far they ought to be made applicable is entirely a question of policy, and is therefore beyond the scope of theoretical discussions. Since the distance principle is, as has repeatedly been explained, a product of a railway situation that has been drawn into political complications, distance rates built thereupon may be applied rigidly over an extensive area without an exception, or compromisingly with some modifications in consideration, to some extent, of economic forces at work. A policy may be so formulated

as to look forward to the radical extirpation of the source of complaints of discrimination, most of which are in fact honest and intelligent, or as to introduce a system of rates, which appears theoretical, in order to avoid complaints as far as possible, without much disturbing prevailing economic situations.

Government regulation of railway rates tends naturally enough to disregard of economic factors and to introduce distance rate structures. However, unreasonable, and inconsistent the basing point, group, blanket and other equalization systems with various rate structures built around them, they are after all the logical result of the interplay of the economic factors which are beyond the control of carriers, and give to each community a rightful natural benefit according to its geographical location. There may of course be some evils, in the event of the laissez-faire policy being adopted in rate regulation, owing to blind instinct on the part of railway managers to secure at any cost as much business as possible, unreasonable pressure from large influential shippers, and others, and the railway regulation in respect of rates, which is primarily calculated to suppress such evils, is very liable to overstep its proper field of function and destroy the relationships created legitimately on the basis of economic necessity.

The rate structure as proposed by the carriers in the South was undoubtedly a step forward for the conformity to the national policy, but it failed to satisfy the Interstate Commerce Commission because of too much consideration given by

the carriers to the economic needs of themselves and the general trade situation, and the Commission desired to introduce the distance principle a little more rigidly, on the belief that it would not in reality upset the economic situation so much as apprehended by the carriers. After all, the difference between the rate systems proposed by the carriers and the Commission is a matter of policy. No doubt distance rates are the only panaces for the extermination of the hot-bed of troublesome complaints from localities situated at a natural disadvantage, but even the Commission did not believe in a distance rate scale being sacred, as will be seen later.

(a) Intraterritorial Limitations

Details in connection with the intraterritorial application of the approved scale were not specified, but were left with the carriers to be determined in accordance with the principles laid down by the Interstate Commerce Commission with a view to the more rigid adherence to the distance principle.

The Commission regarded the scale finally adopted as "on the whole a convenient, logical, and readily understandable method of measuring the service approved in the movement of class traffic." It naturally desired the carriers to apply the scale of rates with the least modifications, but when considerable difficulty was brought home to the Commission, it had to concede that there was "nothing sacred about distance rates".

On the ground that some consideration of convenience and simplicity was necessary in a tariff construction, the Com-

mission admitted the advisability of establishing groups of stations, but limited this rule to a much narrower extent than in the carriers' plan. Consequently, a number of stations may be grouped in a single unit irrespective of the difference in mileage, in cases where they are located within the limits of what is in reality a single industrial community, yet the mileage blocks of the scale so fail as to create differences in the rates of these stations from a common point of origin, and the rates for the whole group are to be figured from a central point within it. All the groups proposed by the carriers that did not correspond with this policy were discarded.

As regards departures from the standard rates, the approved scale was not constructed on any competitive consideration, but, as a matter of fact, competitive forces do exist still in the South, which ought to be taken into some consideration, if the policy is not to be so extreme as completely to disregard the economic law. The Commission recognized to some extent the necessity of meeting the competitive conditions through the depression of rates, on the condition that the reduction of competitive rates would not result in the benefit to one community to the injury of another. The Commission did not explain this condition definitely. The depression in competitive rates is always perfectly justifiable from the economic point of view, so long as it is reasonable, but, at the same time, it appears always discriminatory, giving benefit to one to the injury of another, from the standpoint of the distance principle. Just

how this problem is to be disposed of remains to be seen, but no doubt it will prove a source of friction among the carriers, shippers, and the Commission, when the scale rates are put in actual operation.

However, reasonable depression in rates to meet the actual controlling competition was recognized in principle, and therefore, the scale of rates were to constitute the maximum level but not always the absolute standard, as in the case of the carriers' scale.

The depression of competitive rates is necessarily followed by the question of relief from the provision of Sec. 4 of the Interstate Commerce Act. In this connection, the nature and scope of the competition were not definitely specified, but they will be largely confined to direct-line rail competition, market and water rivalry to be disregarded on the whole, in the consideration of departures from the long and short haul clause.

For the benefit of the carriers with the communities served by them, and also the competitive points, relief may be granted to circuitous routes in competition with direct rail routes, without special qualifications, except where they are so circuitous as to result in the economic waste of transportation or in rates not compensatory at competitive points. The extent of circuity will be determined according to the yardstick which has been already referred to elsewhere.

(b) Interterritorial Limitations

First, as regards the relation with the Middle West in

the Official Territory, the carriers' contention was, on the whole, that a higher level of rates should prevail, due to the traditional combination of locals to and from the Ohio River crossings, and the additional cost in connection with transfer operation at boundafy points. The Commission, however, did not accept it, on the ground that there was no sufficient evidence produced to support it, that the transfer cost might be more than offset by the benefit of the economical and efficient operation due to transfer from car to car, and that, even if it was not, the interterritorial movement did not always involve transfer operation at the River points. Therefore, the maintenance of a higher level between the Middle West and the South was not justified, except by the desire on the part of the carriers and shippers to avoid an abrupt departure from the past.

Next, in order to meet the possible situation where the Middle West was placed at a disadvantage in competition with the East for traffic to the South, the most logical and simple plan was to apply 90% constructive mileage within the Official Territory, the all-rail through rates not to be lower than the lowest combination of the locals. The result thereof would be a reduction of 11.64% in the revenue of the Southern carriers according to the 1924 traffic tests, but the reduction of this extent might be inevitable in a just and reasonable readjustment of a sweeping nature. However, the above idea was abandoned to avoid the sudden and serious disturbances and the reaction upon the carriers and shippers, which it might possibly bring about.

The final conclusion was that the rates for the portion

within the Official Territory were to be left untouched, and a differential rate scale established for the South to and from the gateway points, the through rates thus produced not to exceed the lowest charges worked out on the Southern scale over the entire length of haul, or on the combinations of the locals plus certain differentials on the South. Some key rates might be used in this connection with the approval of the Commission.

Secondly, as regards the relation with the eastern part of the Official Territory, the rate system was historically based on the principle of determining first the water-rail rates between the port cities on the Atlantic Coast and a large portion of the Southern Territory, on the combination of the respective rates of the coastwise water lines and of the rail lines penetrating the interior from the Southern Atlantic ports, the all-rail rates to be fixed differentially higher than the above water-rail rates.

Actually, however, the rates thus determined had been depressed excessively in the opinion of the Interstate Commerce Commission, and, moreover, the Transportation Act of 1920, in Sec. 500, made it a national policy to promote, encourage, and develop water transportation in any way possible. Therefore, the rate structure, whatever it might be, must be so framed as to reserve a fair portion of traffic for coastwise steamers for the maintenance and promotion of their service in competition with the rail carriers.

Next, the carriers proposed to maintain the group system in the South in the relationship with the East, but the Commission ascribed the larger portion thereof to the arbitrary de-

sire on the part of the railways to stick to the basing point method, which had greatly lost its original significance due to the reduction of water competition to a negligible factor.

The final result was roughly as follows:

First, as regards all-rail rates, the construction thereof should be based on the application of the Southern scale rates over the entire length, with constructive mileage equal to 90% of actual distance for the portion of the haul within the Official Territory, to meet competition with the water-rail rates from the East to the South.

Secondly, as regards water-rail rates, the Southern scale rates should likewise be used for the entire distance, with constructive mileage on the water routes. The determination of the water route constructive mileage was based on the broad idea that the coastwise service cost cheaper than the rail service, because of no construction or upkeep of roadway and track, and no switching in the operation of the former. Because of the lack of cost data, however, it was fixed largely in consideration of the traditional relationships, with references to the port rates and incidental charges, such as insurance, wharfage, transfer costs, etc. Thus, constructive mileage was established from Baltimore to Norfolk, Charleston, Savannah, Brunswick and Jacksonville.

Next, differentials were fixed on the basis of Baltimore for the eastern ports, such as Washington, Philadelphia, New York, Boston, Providence, etc., in consideration of the respective time, mileage, terminal expenses, port-to-port rates, etc.

Washington was grouped with Baltimore, Philadelphia with New York, on differentials above Baltimore, and Boston and Providence, as a unit, on differentials above New York.

Thirdly, as regards rail-water-rail rates between the Eastern portion of the Official Territory, and the South, two alternative methods were adopted, rates to be calculated on either of them, giving the lower charge. The one was the application of the southern scale throughout, on the 90% constructive rail mileage from interior points in the East as far as Baltimore, the specified constructive water mileage from Baltimore, and the short-line actual rail mileage in the South. The other was also the application of the southern scale throughout, on the 90% constructive rail mileage from interior points in the east as far as the nearest port, the specified constructive water mileage from Baltimore, the port differential over Baltimore, and the short-line actual rail mileage in the South.

On the whole, the national policy, which had been growing more rigid at each opportunity, was clearly reflected in the attitude of the Interstate Commerce Commission in its investigation in the southern class rate system, but the final result thereof is indicative of the Commission's hesitation in its last stage completely to counteract the economic law, as anticipated by the faithful adherents of the distance principle, in the establishment of shortest route mileage groups, arbitraries, constructive mileage, and differential relationships, and in the final recognition of the necessity of some departures from the long and short haul principle, in the case of circuitous line

competition, although it is permitted in the Interstate Commerce Act.

Throughout the course of its investigation, the Interstate Commerce Commission acted on the idea that the economic bases which had caused the peculiar rate structure built up in the South, had already undergone great changes, and there was no longer much justification of an irregular rate system in the South. A sudden break with the tradition would not seriously affect the situation, and, if it was disturbed, it must be looked upon as sacrifice in the interest of the systematic rate structure. Very soon the situation would automatically adjust itself to the new rate system. Moreover, the distance rates would serve to diffuse industry and population over the Southern Territory, where much political and social evil had started from the concentration thereof. The limitations provided in connection with the application of the rate scale were designed simply to bridge over temporarily between the past and the future. After all, the Commission was to adjust the economic situation by means of a rate system, as is in practice in countries where railways are nationalized and operated chiefly from political considerations, instead of attempting to conform the rate system to the needs of the economic situation. The Commission attempted to justify its stand from theoretical and economic reasons, but its contentions seem to have often departed from logical sequence. After all, the limitations provided by the Commission were the product of its difficult position between the compulsion of the economic law and the demand of political situation. If the Com-

mission is to respect the economic principle, it must keep aside, with supervisory power to remove the actual evils that may creep in the rate structures, and see that the rate system develops naturally along the line of the economic requirements. Or if, on the other hand, it is to follow the public notion of justice, it ought to adopt an absolute distance scale, without a single exception, throughout the entire or a given territory of the country. Any limitation that will be made in the application of a distance rate scale reflects a compromise in the inevitable conflict between principle and policy.

IV. LIMITATION OF DISTANCE RATES

The above discussion leads logically to the conclusion that what is very commonly called the distance principle is, as a matter of fact, not a principle, which is by no means theoretically valid nor practically advisable; that the fallacy is ascribable to the mistaken notion that railway charges are under the control of railways, and that all discriminations are altogether obnoxious and repugnant; that through the conflict between the Interstate Commerce Commission and the federal courts in the interpretation and enforcement of Section 4 of the Interstate Commerce Act, the trend has been unfortunately towards the more rigid application of the distance policy; and, finally, that the result thereof will be the artificial restriction of the operation of the economic law to the possible detriment of producers, consumers and railways.

It has been also made clear that, insomuch as distance rates are the product of a policy, instead of a principle, the limitation to which the application thereof may be subjected does not depend on any theoretical basis, but is variable according to the extent and scope of the basic policy itself. In other words, the more are the railways placed under political considerations, the smaller will the limitations become, and, conversely, the freer are the railways from political pressure, the more will the rate structures become economic, and, therefore, complex.

A. Nature of Distance Principle

Apart from the actual method of construction and the necessary effects upon economic conditions, it is true that the distance rate scale appears "simple, mathematical, symmetrical, equitable, and satisfactory both to shippers and railways," but the preceding discussion leads to a contrary conclusion. It is impossible to defend it either from the theoretical or practical point of view. If it is supportable at all, it is only on a political basis. Even faithful followers admit that it is necessary to consider to some extent the economic conditions under which the rate system is applied, and group rates, concentration rates, special contract rates, or other exceptional rates, may be unavoidable, if communities and carriers are to be protected from a serious harm resulting from the application of distance rates.

On the nationalized railways, distance rates are invariably in effect, not because they are economically justifiable, but because of the political necessity of suppressing complaints of discrimination. Undoubtedly, the distance policy is the most effective weapon for this purpose, for the principle, that distance should constitute the only yard-stick with which to measure the quantity of service and the charges should vary in accordance with the service rendered, is sufficient to stifle any complaint arising in connection with the economic law in respect of competitive forces and carriers' requirements.

B. Fallacy of Distance Principle

The so-called distance principle is in reality not a

principle, but the distance scale is invented chiefly for political reasons, but, unmistakably, the prevailing popular notion of justice favors it as the most reasonable and equitable rate system. The fallacy is ascribable to the erroneous idea, which seems to prevail extensively as to economic rate structures and discriminations involved therein.

1. Economic Rate Structures

The contention that the prevailing rate structures are arbitrary and inconsistent is supportable only if the fact is ignored that railways are subject without exception to competition with rival carriers and among producing and distributing centres. As a matter of fact, however, any rate system that exists is not at all arbitrary, but the result of the nicely balanced commercial conditions which are completely beyond the control of railways. Without unnecessary interference from outside, the interaction of competitive forces has led, and will lead, to the formation of economic rate structures yielding beneficial results for the people and industries at large.

2. Discriminations

If competitive or trade conditions require the depression of rates, rates must of necessity be made to conform to the requirements, which have no relation whatever to non-competitive rates, in order to make it possible for the greatest volume of commodities to find a market. Traffic, that cannot find a market unless it is handled 500 miles at the same rates as for 50 miles, must be handled 500 miles at that rate. There is abso-

lutely no injury to any party concerned in the depression of the 500 mile rate, but, on the contrary, it results in the benefit of the producer, consumer, carrier, and also of the shipper at the non-competitive point, for the increase in the tonnage for the carrier will ultimately bring about the betterment of the service and the reduction of the general level of rates.

Railway rates are fundamentally discriminatory in nature. Even in a distance scale, the rates vary with distance, volume, and character of traffic, and in an economic rate system such discrimination prevails to a greater extent. However, discrimination may or may not be justifiable; so long as rates are made on economic bases the discriminations are reasonable and justifiable, and, if not, they are condemnable.

Any economic rate system is attended with necessary evils, according to F. H. Dixon, and most of the discriminations are perfectly honest and intelligent, with very few unjust rates, according to B. R. Meyer. (Publications of American Economic Association, 3rd Series, Vol. VII, p. 61 et seq.)

It must be admitted, however, that in the case of a thorough economic rate system, there may possibly be misadventures and blunders on the part of rate makers, due to the influence from powerful shippers, compromise between competitive interests, etc., which will result either in extortion from defenseless shippers, transportation waste, or self-destruction. But it certainly does not call for the absolute necessity of the provision of the 4th Section of the Interstate Commerce Act.

These evils can adequately and effectively be dealt with under the 2nd and 3rd Sections thereof. In other words, if the Interstate Commerce Commission is allowed to function properly, there is no necessity whatever to take a positive step in enforcing the long and short haul clause, and introduce distance scales in defiance of the economic law with consequent unnecessary disturbances in the trade situations. Nothing could be more foolish than the enactment of legislation which would unnecessarily interfere with the development and operation of the commercial agencies, which are possible only in economic rate structures with discriminations both justifiable and beneficial.

In the construction of the southern class rate scale, the Interstate Commerce Commission attempted to justify its attitude on the ground that the conditions had greatly changed, and that the prevailing rate structure would tend all the more to the concentration of trade, industry, and population. However, the former reason is largely a matter of individual opinion, and, as regards the latter, it seems to have regarded the phenomenon as the result of the rate system instead of making the actual condition responsible for the rate structure. It is indicative of the tendency towards the injection to a growing extent of political factors in the making of rates.

C. Courts' Attitudes

The attitudes assumed by the federal courts in the policy adopted by the Interstate Commerce Commission have varied very widely, but, on the whole, they seem to have had as much regard as permissible under the Interstate Commerce Act to the

economic law operating in the making of rates.

In the opinion of the federal courts, "all the circumstances and conditions, which reasonable men would regard as affecting the welfare of the carrying companies, and of the producers, shippers, and consumers, should be considered by a tribunal appointed to carry into effect and enforce the provisions of the (Interstate Commerce) Act". There are numerous cases where the courts overruled the Commission's orders to enforce the distance principle rigidly, taking into consideration the competitive forces, both transportation and market, to which the railways were subjected.

D. Interstate Commerce Commission's Attitudes

The attitude of the Commission is of course under the control of the Interstate Commerce Act and also of court decisions, and it is not allowed the free play of its discretion, but it seems to have had no permanent policy in its enforcement of the provision of Sec. 4 of the said Act. At one time it took a very stringent attitude; contracting the scope of competition, which justified the departure from the long and short haul clause, to only that with carriers outside of the Commission's control; and at another it suddenly became very generous and expanded it to market and transportation competition of any kind, giving each time some reasons or other for its different decisions.

On the whole, the Commission acted at first on the laissez-faire policy, and the principle was to "give each community the rightful benefits of location . . . to keep different

commodities on an equal footing, so that each should circulate freely and in natural volume". (1 I.C.C. 100)

Later, with the change in the 4th Section of the Act and the continuous cropping out of complaints of serious nature, the Commission began to alter its former lenient, hands-off policy, and interfere apparently out of desperation, with rate structures on a more rigid basis. Its decisions were often "diametrically opposed to the statesmanlike spirit in which the federal court construed the Act and weighed the evidence and suits brought under the Act". (162 U.S. 234)

The attitude of the Commission has since grown more and more rigid, and the extent of the relief allowed from the long and short haul clause has been rapidly narrowed until it was confined to actual water competition of controlling force, and direct rail-line competition, with scant limitations, market competition to be largely disregarded.

E. Trend of Policy

Under the provision of the 4th Section of the Interstate Commerce Act and the pressure of the public sentiment, the Interstate Commerce Commission has been inclined to the more strict application of the distance policy. The change in its policy in the enforcement of the 4th Section has been, as discussed before, to remove complaints of discrimination, and not by any means based on commercial considerations, in spite of all the various reasons given by the Commission in its attempts to justify its

position on economic grounds. The necessary result of the policy has been the gradual introduction of distance rates of a more or less extent at each adjustment of the rates complained of. As long as an economic rate system prevails, the settlement of a complaint of discrimination is quickly followed by another, and there is no end of it, for the structure is highly organic and very sensitive of even the slightest interference from outside at any point of it. The only effective measure to put a permanent stop is to adopt distance rates sweepingly over an extensive territory. If it is the intention of the national policy to suppress the source of complaints once for all, there is no good reason why distance rates should not be universally introduced in the most rigid manner, and why the Commission should remain wavering from this side to the other, giving conflicting reasons in its adoption of distance rates.

F. Effects of Distance Rates

The only benefit derivable from the introduction of distance rates in place of economic rate structures is the permanent removal of the complaints of discriminations, which cannot be effected satisfactorily and completely under the provisions of Sec. 2 and 3 of the Interstate Commerce Act. However, evils following the adoption of the distance principle are legion.

First, the distance policy rests on the total or partial disregard of competitive force on railway charges, and, therefore, the adoption thereof naturally results in the complete or partial restraint of legitimate competition, upon which the United

States and Great Britain have long relied for the healthy development of industry and commerce. Apart from the question whether competition is a dependable measure of automatic regulation as is generally believed to be, the introduction of the distance principle will no doubt bring about a radical departure from the traditional policy of the country.

Secondly, since the charges in a distance scale very only with distance, the natural rights of favorably located communities will necessarily be disregarded. Rates at competitive points must be higher than at intermediate places, simply because of their longer distance, and the result thereof will be the deprivation of the competitive points of their natural, economic advantage, the withdrawal of the railway from the competitive traffic, the reduction in the revenue, and lastly the inevitable increase in the general rate level, or, if it is not possible, the deterioration of the service and the final collapse of the railway operation. The advantage in shorter distance is certainly given to intermediate localities in a distance scale, but what will be the actual benefit to them after all?

Thirdly, the primary function of a railway operation consists in the overcoming of distance and creation of place utility. A distance scale may be so constructed as to allow the flow of traffic within a fairly large area, but there is a limit somewhere. The curve of rates is to rise continuously, however slightly and gradually, till it reaches the maximum limit set by the value of service, and the transportation facility

will be denied to longer-distance traffic. The free and cross current of traffic will be greatly hindered by distance rates. The question of the waste of transportation can justifiably be considered only in countries where balance prevails fairly throughout in industry, trade, and population. In the United States, covering a vast territory, with sparse population concentrated at economically strategic points, and industrially divergent local peculiarities, the long-distance conveyance of traffic particularly low-grade commodities, and the cross flow of merchandise seem to serve the best interest of the communities at large. The result of the distance policy will be the limitation of traffic and market, and the ultimate advance in the general rate levels. The producer will be cut off from market, the consumer will be driven out of supply, and the carriers will be left with insufficient revenues.

Further, if the passenger fare system were so framed as to encourage long distance and interurban travels by means of the adoption of an economic fare system, in place of the present uniform mileage basis, much benefit would be obtained politically and educationally, as well as a great financial profit accruing to the railways, which have lately been suffering a growing loss in passenger traffic owing to motor competition.

After all, the problem of the limitations of distance rates is a question of the policy itself, which attempts to introduce the distance principle, and any outside interference with the economic rate structures will result only in the ir-

revocable damage to the carrier, consumer, and producer. When and where trade, industry, and population have been sufficiently diffused, and competition as between carriers and markets has become a negligible factor, the rate structures will grow approximately on a distance scale without the least pressure from the third party.

PART TWO
PARTICULAR PROBLEMS

I. INTRODUCTION

In the discussion of limitations of distance rates, general outlines have been given, with a view to showing in brief that what is generally called the distance principle is not in reality a principle, but a policy formed as a result of railway pdoblems being involved in politics, and that limitations, if they are to be provided at all in the application of distance rates, depend, not on any theoretical basis, but on the scope and extent of the policy itself.

In order to demonstrate the impossibility of the distance principle in more detail, an analysis must be made of the formation of an existing rate structure, the cost and the value of service, the force of competition, and the effect of regulation.

II. FORMATION OF EXISTING RATE STRUCTURES

In the intelligent and reasonable disposal of railway charges, the fact must not be overlooked that they have never been the product of any definite plan or theory from their intrinsic nature, but the result of natural development in the course of the successive changes that have been undergone in the population, industry, and trade of a country, in many cases subject to public regulation which was often unnecessary and unjustifiable from the economic point of view.

A. Natural Development

Historically, railway charges were originally made according to the ability and willingness of traffic to pay, to divert principally high-class traffic from the earlier means of conveyance, namely, stage coaches, wagons, boats, etc. Charges created in this way in their infancy gradually developed through the process of the constant elaboration of the original tariffs, into a comprehensive structure, by the successive introduction of lower and lower charges to secure new traffic of higher grades over new areas. The railways had to compete with their rival carriers to build up business, and supply adequate service to meet the growing demand of the communities they served. Each individual charge was naturally made to fit to the particular situation, and rates were established, which yielded as a whole a required amount of revenue to the railways, though, economically speaking, cost was adjusted to revenue, instead of revenue being regulated by reference to cost, as in

any enterprise subject to competition, and which, at the same time moved traffic freely and extensively. In other words, the rates, which were made in the process of the interplay of various conditions both on the demand and supply sides of the service, grouped together to constitute a rate structure. However irregular, inconsistent, and unreasonable it may appear, it is no doubt economic, and as long as the economic law is accepted, such rate systems as the above must be taken for granted unconditionally.

Inasmuch as railway charges are not a matter of mathematical formulae, but have been built up in the trial and error process over a number of years to conform to the logical results of the operation of constantly varying numerous factors under particular situations, it is absolutely impossible to reconstruct anew a rate system with any degree of reasonableness and justice. Any attempt in that line would be simply arbitrary.

If all the tariffs were destroyed, all the knowledge thereof wiped out, and a group of men were charged with the task of the construction of freight tariffs covering the movement of innumerable items between an indefinite number and combination of points, under the existing industrial and competitive conditions, it would be expecting the impossible to hope that, within any brief period, a workable system of rates could be devised. To tear down an "arbitrary and unjustifiable" rate structure and to construct a "reasonable" one in its place, in order to please some sections of the people who are deaf to economic reasons, would be to build up a more arbitrary and

unjustifiable rate structure.

Charges of private railways are subject to public control in all the civilized countries, but under intelligent regulation, where public authority is to be exercised only in the event of charges being made arbitrarily in contravention to the economic law, they are made in accordance with the universal law of supply and demand. They are determined, so that the individual charges in the end may more than cover additional costs, although they are not accurately ascertainable, and they, as a whole, may yield a reasonable amount of revenue, each charge being differentiated to move the traffic according to its ability or willingness to pay as the case may be. The constituent factors are diverse, but none of them has much to do with the distance of haul. An economic rate structure is and ought to be, therefore, largely independent of the distance element.

B. Types of Structures

Rate structures have each developed in conformity to the particular social and economic conditions, often subject to contra-economic interference from public authority, but they may be classified into several different types according to their main features.

a. Equal Mileage System.

There is an equal mileage rate system, in which rates per unit of traffic per unit of distance, as, for instance, rates per ton per mile or 3/4 mile, etc., remain constant over the whole distance.

This type of rate structure is by no means grounded on any economic reason, for either the cost of service or the ability and willingness to pay does not justify the flat rates, and the only basis on which it rests is the mistaken idea that equality is equity, in which distance is regarded as the only measure for the service rendered to determine the charges therefor. On the contrary, it is neither fair, as is often believed for the cost of service does not remain constant but varies according to the physical and commercial conditions under which particular service is rendered, nor feasible for important traffic, for it heavily penalizes the long-distance, low-class, competitive conveyance. Therefore, it is permissible only for political reasons to suppress complaints, or for the sake of simplicity in the calculation of charges. In the latter case, however, it does not operate satisfactorily unless the traffic to which it is applied is insignificant in the whole business, or is not much affected by the amount of charges imposed thereon, as in tne passenger situation of the American railways.

In Prussia, the rates for five of the wagon-load classes remained constant per ton per kilometre over all the distances, but the actual application of this flat system was greatly limited through the establishment of a number of exceptional rates to relieve the situation. In the passenger fare structure, the flat system is likewise adopted, as follows:

Per kilometre (pf.)	Class
7.0	1st
4.5	2nd
3.0	3rd
2.0	4th

To the fares thus determined will be added taxes varying from 5 pfenigs to 8 marks according to the amount of fares paid, and the classes of service.

In Great Britain, statutory schedules of goods rates were revised for all the railways in 1891-1892, in which maximum rates were established on the equal mileage basis. However, the "bonus mileage" was allowed for the sections of line which had cost comparatively heavily in construction, for instance, the Severn Tunnel, and the Forth Bridge, as is the case with the constructive or traffic mileage in other countries. Moreover, the statutory schedules have never operated in practical cases, for the actual rates have always been much lower in almost all the cases than the statutory levels.

The passenger fares are also nominally subject to the flat-system with the shortest-route principle, but it is applicable to very limited cases in remote localities with light traffic and without competition, practically all the fares being made on economic bases with the statutory maxims.

In America, where the passenger traffic constitutes an insignificant portion and people generally do not care for prices so much as speed, comfort and luxury, the fare system rests

invariably on the flat principle, with only a few different levels throughout the country.

2. Tapering Mileage System

There is the tapering mileage rate system, which prevails more extensively than the equal mileage system, and is adopted in principle on all the railways in the countries where they are nationalized or subjected to stringent regulation. This system is not also based on economic grounds, but has some advantages over the former in theory and in practice.

The theoretical support, which is in reality imaginary, is that it costs a great deal less to carry one ton 100 miles than to carry 10 tons 10 miles, though in each case the process is expressed as the carriage of 100 ton-miles, because in long hauls more mileage is gotten out of engines, cars, train staff, etc., than a number of short hauls, which necessarily involve waits between; engines and cars are better loaded; traffic is spread more evenly over the length of the line; and the terminal costs are distributed over more miles.

The practical benefit derivable, as contrasted with the flat system, is that commodities and persons can thereby be moved over longer distances than otherwise, because traffic becomes less and less able to bear charges as each mile is traversed. The lower-graded the traffic, the shorter will be the field available for transportation, and, moreover, even higher-class traffic does not show any regular arithmetical progression in its ability to pay.

In Great Britain, a schedule of regular rates is

provided in each railway company with some reference to the statutory levels, in which the tapering system is adopted, although it is no more in actual operation than the statutory rates, except for certain insignificant, non-competitive, local traffic.

In the Midland Railway schedule of regular rates, the per ton per mile rates are as follows:

Classes	For 1st 20 miles d.	For next 30 miles d.	For next 50 miles d.	For greater distance d.
A	1.15	0.90	0.45	0.40
B	1.25	1.00	0.80	0.50
C	1.80	1.50	1.20	0.70
1	2.20	1.85	1.40	1.00
2	2.65	2.30	1.80	1.50
3	3.10	2.65	2.00	1.80
4	3.60	3.15	2.50	2.20
5	4.30	3.70	3.25	2.50

The passenger fares are quite economically constructed, as said before, and are not affected by the statutory levels, nor by the regular rates, in the majority of cases, which the railway companies have established as standards. However, the tapering system has been adopted in principle in the fares for special services. For instance, the trader's ticket fares diminish per mile as distance grows, as follows:

1st Class Annual Trader's Season Ticket

Miles	Rates Per Mile (Shilling)
30	9.53
50	7.93
100	6.71
150	6.09
200	5.50
250	4.84
300	4.40

In Germany, the equal mileage system was long adopted in principle for freight rates, but in 1921 the system was completely superseded by the tapering method.

3. Zone System

There is the zone system of rates, which resembles verly closely the group system in that stations in a certain area are given the same rates irrespective of distance, but which is tenhnically distinguishable from the latter, because there are definite distance relationships between zones while distance is not the major consideration in the establishment of different groups.

Under this system, distance is measured in large units or "zones", instead of in single miles or otherwise, and the charge for the conveyance of a particular shipment is the same where the shipment is dispatched to any point within a zone, a second and larger amount being charged for a shipment to any place beyond the first zone, and within a second zone, and so forth.

If zones are comparatively small units of distance, they are generally termed as "blocks", and they are employed more or less in any system of rates and fares for the sake of simplicity in tariffs, accounting, printing of tickets, etc. This is not a question of principle, but largely a matter of administrative convenience.

The only disadvantage of this system is that, where the zones are relatively large in size, and the rates therefor sharply vary at each zone, the nearer points are particularly at a disadvantage as compared with the farther points in the same zone, and the farther points in a zone are accorded an unproportionately favorable treatment than the nearer points in the succeeding zone.

In Prussia, the passenger fares are based on the flat system, as stated before, but the fast train fares are determined by adding to the ordinary equal kilometric fares the supplementary charges which are fixed on the zone system, as follows:

Supplementary Charges for Fast Train Fares

Kilometres	1st & 2nd Classes	3rd Class
1-75	50 pf.	25 pf.
76-150	100 "	50 "
over 150	200 "	100 "

(Fares for trains de luxe are 1st class fast train fares augmented by 20%.)

On the Austrian State Lines, the slow passenger train fares per 10 kilometres were as follows:

Zones	1st Class (hellers)	2nd Class (hellers)	3rd Class (hellers)
1st 15 zones (1-150 kms.)	84.00	50.40	28.00
2nd " " (151-300 kms.)	81.76	48.16	25.76
3rd 30 " (301-600 kms.)	78.40	44.80	22.40
Remaining zones (over 600 kms.)	73.92	40.32	17.92

On the Hungarian State Lines, the entire length was made up of 3 short-distance and 16 long-distance zones, for the purpose of determining the passenger fares, the zones tending to increase in size with the growth of distance, and all distances exceeding 400 kilometres falling in the last zone. This system dates back to 1889, and later several changes were made, each time in the direction away from the postal uniformity.

In Italy and Russia, the zone system prevails extensively in principle.

In America, this system is adopted in every case where distance tariffs are in effect, under the term of the block system. The most conspicuous is the system of the parcel post rates, which are fixed in four great zones.

In Great Britain, in ordinary cases the goods rates are economic, but, according to the maximum rates for conveying milk by passenger trains under Division I of Part V of the Railway Rates and Charges Order Confirmation Acts of 1591-1892,

the maximum milk rates are as follows, per imperial gallon:

	d.
Under 20 miles	0.50
Above 20 and under 50 miles	0.60
" 50 " " 75 "	0.70
" 75 " " 100 "	0.90
" 100 " " 150 "	1.00
" 150	1.20

Parcel rates by passenger trains based also on the zone system, as follows:

1 mile - 30 miles	6 d.	per 24 lbs.
31 miles - 50 miles	1 s.	" " "
51 miles - 100 miles	1 s. 6d.	" " "
101 miles and above	2 s.	" " "

Passenger fares for certain special services are fundamentally based on this system, as, for instance, in the case of the weekly tickets in use in the neighborhood of certain large urban areas on the Great Central Lines of the Midland Railway.

4. Group System

The group system is a system under which a number of stations are grouped into a single unit to which one rate is given. The only difference, if there is any at all, between the preceding system and this lies, as discussed before, in the fact that in the group system there is no distance element

as primary consideration between one group and another group or stations outside of the group, although some differentials are often established between them roughly on the basis of mileage.

This system has come into being to meet the necessity of equalizing several ports or towns among which competition exists. In order to keep different localities on equal terms in competition, and enable the railways serving them to participate in the respective business, the rates to and from such points must of necessity be blanketed. It is one of the economic rate systems, and, therefore, it is far from the requirements of the distance principle. Although, in this system, complaints may and actually do arise from shippers at the nearer points in a group, in the case of output going all in one direction to the group area, who are apt to think, quite erroneously, that the railways are depriving them of what they call "the natural advantage of their geographical situation."

However, the advantage of the group system is positive and substantial. In addition to simplicity in the tariffs, producers and buyers can thereby send and get their supplies to and from the different points within a group on equal terms, and the railways concerned can all participate in the traffic on the same footing. Legitimate competition can be kept alive between the trade centres and also between the railways. Wherever economic rates prevail, the group system is in practice to a more or less extent according to the competitive conditions.

5. Postage System

There is the postage system, which is the extreme form of the group system, in that it entirely disregards distance and the charge is absolutely the same for particular traffic however far it is carried within a vast territory or over an entire railway system in a particular area.

This system is simpler and more equitable than any other rate system that can be devised, provided that the cost of service at both ends is by far greater than the actual cost of conveyance. In the case of letters, the cost of conveyance constitutes only a fraction of the total cost, which is incurred mainly for collection, sorting, and distribution, and, therefore, this system is justifiable. Moreover, the charges for letters are so small in amount that it is not feasible to grade them according to distance, or otherwise.

If the postal system is universally adopted in the fixation of railway rates and fares, the short-distance traffic will be greatly penalized, and will not be allowed to move freely. However, in the case of short-distance railways, such as urban transit lines, where the line-haul charges are almost uniform, and the absence of differentiation in rates does not much affect the willingness of traffic to pay, this system may work advantageously.

In America, practically all the city transit railways adopt the uniform fare system at least within the urban limits, but they are confronted with a menace of competition particularly

for shorter-distance traffic in the event of the necessity of raising the levels of fares.

Not only in America but also in many other countries, the postal system prevails in their elevated, surface, and underground city railways, because of the economic and practical reasons.

In London, however, the zone system has been adopted in the underground and surface railway systems. In the early period, the Central London Railway charged the uniform rate of 2 pence, and the result was the diversion of shorter-distance traffic to buses. The Piccadilly Railway, which was built later, adopted the zone system, in view of the failure of the former railway, and the entire railway fares on the London railways have since been based on zones.

It goes without saying that the postal system of rates cannot by any means be applied to a large railway system.

6. Economic System

The form of the economic rate system cannot be described in a simple and definite manner. The system, in which all the rates and other charges are determined according to the ability and willingness of the traffic to bear, with incidental reference to the requirements of the additional cost principle, the revenue of the traffic as a whole, so that traffic may move freely over a long distance, is economic. In it distance is only a very minor factor, for it affects very little the cost of service of the ability and willingness to pay. The struc-

ture based on the economic system is the combination of equal mileage, tapering, zone, group, and possibly other charges, and, therefore, it is only too natural that it appears highly complicated and irregular. Essentially, the economic system of rates does not rest on any particular type but on any basis that works best. If it is to be condemned because of its appearance of complexity and irregularity and, therefore, of its unreasonableness, then the economic law must be condemned as "unreasonable."

III. COST OF SERVICE

A distance rate scale, developed logically from the distance principle, cannot be supported on practice, equity, and justice, unless cost is ascertained as the sole basis thereof. Any attempt to construct a theoretical rate structure, as required by the distance principle, must necessarily result in a complete failure and end in a scale of rates which is by far more arbitrary and unreasonable than any rate system evolved in the process of the interoperation of various economic factors. Since the Interstate Commerce Commission ascribed the failure of its recent investigation of the southern class rates to build a more reasonable rate structure based upon the academic distance principle to the lack of cost data, it seems to have believed in the possibility of the principle, only if cost data had been available, although it quite contradictorily admitted that cost would vary with every possible difference in the conditions and circumstances under which transportation is conducted, so that it could by no means be made the basis of a distance rate scale, and contended that railway charges ought to vary with the amount of service rendered, as measured by the distance covered.

Railway cost is not so simple in character and composition as it is generally supposed to be. It is composed of innumerable interrelated items of expenditures for the benefit of all or a large part of the traffic, and it is, therefore,

absolutely impossible to ascertain, even approximately, the cost of performing service for any particular group of traffic under each varying condition and circumstance. Not only is it impossible to ascertain the cost of individual services for the purpose of determining particular rates, but, on the whole, it is very little related to distance. The entire cost fundamentally depends upon the physical property used and the total volume of traffic handled. The cost ascertainment is possible to a certain extent only in connection with the establishment of some comparative relationships between different groups of traffic.

Cost, on the basis of which alone the distance principle is supported, can never be justifiably made the ground for the determination of fair and equitable railway charges, because it is beyond possibility to ascertain the expenses incurred in connection with the handling and moving of particular groups of traffic, owing to its being composed of joint and additional factors; and also because such expenses, if ascertained, vary with the total amount of traffic handled, owing to its being composed of constant and variable factors. Stated otherwise, the character and nature of the railway cost, consisting of constant and variable factors and also of joint and additional factors, all of which correlate with one another inseparably, make it absolutely impossible to constitute the basis on which a reasonable rate system is to be constructed.

A. Diminution in Cost

Railway business is primarily subject to the economic law of increasing returns or diminishing cost. The cost incurred in connection with the performance of service does increase with the growth of the traffic, but in a smaller ratio, and, consequently, the average cost per unit of traffic diminishes as the traffic increases, up to a certain point from which the developed traffic cannot be handled with the existing facilities. A large amount of investment is abruptly required adequately to carry on the already expanded business, and the result is that the per unit cost sharply rises. The advanced cost gradually declines as the traffic constantly grows, and then the same process is repeated. However, insomuch as the abrupt investment of a large amount of capital to take care of the business, which has reached the maximum capacity of the existing facilities, is not made for the temporary benefit, but for the use during succeeding years till the maximum capacity is again reached, the cost ought, theoretically at least, to be spread over a reasonable number of years, the result being the continuation of the diminishing ratio in the per unit cost, instead of the periodic sharp upward curves.

So long as the existing plant and labor are available without substantial additions, the growth of traffic in volume brings about the fuller utilization of the facilities, with the consequent reduction of the fixed charges per unit of traffic handled, as the result of the greater specialization of

machinery, plant and labor, the greater development of subsidiary enterprises, such as in locomotive repair shops, the economical buying of materials and supplies, etc. Thus, cost does not increase in direct proportion to the growth of traffic, the great bulk of cost having to go on whether the traffic to pay for it comes or not, because of the non-transferability of the capital once invested in the railway property.

1. Capital Charges

The railway cost consists of two major items, capital charges, and working expenditures, either of which does not directly vary with the increase or decrease in traffic.

As regards capital charges, they may be subdivided into three factors, as follows:

Roads and buildings (Land, road construction, track-laying, signal equipment, station and platform building, etc.)

Rolling stock (locomotives, cars, floating equipment, etc.)

Miscellaneous property.

The capital charges on the roads and buildings remain almost constant without regard to the volume of traffic. A normal increase or decrease in traffic little affects this factor in the capital charges, which constitutes approximately 80% of the entire cost chargeable to capital, although the ratio is variable with different railways to some extent.

The charges on the rolling stock, which occupies about 15% of the total capital charges, theoretically vary with

traffic, but, as a matter of fact, they do not increase in direct proportion to the growth of traffic, for cars will be better filled, longer trains will be used to save engines and cars, prompter loading and unloading will be made possible, and greater speed in operation will be provided.

On the whole, therefore, the capital charges remain almost constant irrespective of the increase in the volume of traffic and the amount of revenue, the result whereof will be the reduction in the proportion of revenue which is required for the capital charges, and, consequently, the decline in the charge for capital per unit of traffic. The decrease in the capital charge for each unit of traffic will go either for the improvement or stabilization of the credit situation of the carrier or for the reduction of the general level of rates and other charges.

To illustrate:

Railway capital per route mile	$50,000.
Revenue per route mile	10,000.
Working expenditures (80%)	8,000.
Profit (4%)	2,000.

In the above case, the rate of return on the capital invested is 4%. When the volume of traffic is doubled, with the same operating ratio, although, as a matter of fact, it will decline with the increase in traffic, the result will be:

Revenue	$20,000.
Working expenditures (80%)	16,000.
Profit (8%)	4,000.

The rate of return is doubled with the increase in traffic, and, in the case of the relative absence of competition, this profit may be disposed of in the following manner:

Bonds, and preferred stock (50% of capital)	$1,000.
Ordinary stock (50% of capital)	1,500.
Improvement chargeable against capital	750.
Given to the public in reduced rates	750.

If the railway is subject to keen competition, the rate of interest and dividend may not be raised, and the profit may be wholly devoted to improvement and reduction in charges. At any rate, the investors and owners will be assured of the profitable return upon their capital, and the public will also benefit through the reduction in charges, or, at least, the stability thereof in the future.

2. Working Expenditures

The working expenditures are also composed of diverse items, which may be roughly reclassified as follows:

General charges

Maintenance of way and structures

Maintenance of rolling stock

Transportation and traffic

The general charges include the cost incurred in connection with the working of the undertaking as a whole, and they are largely independent of the volume of traffic handled.

As regards the maintenance of way and structures, the cost varies with the volume of traffic, but not in direct proportion thereto.

In this connection, comparative studies were carried out of the costs on the Midland Railway Company and the Northern Counties Committee Lines in Great Britain on the basis of the actual results of 1911, the former and the latter to be called hereinafter A and B, respectively.

		Maintenance cost
A	1,532 miles of line	£ 1,220,000
B	263 " " "	65,000

The cost per mile of line was:

A	£ 800
B	250

However, A had much double and a good deal of quadruple track, while B had chiefly single track to maintain. Therefore, the cost was ascertained per running-track-mile, as follows:

A (3,116 miles of track)	£ 392
B (320 " " ")	203

In addition, sidings were taken into account, on the basis of 3 miles thereof being equivalent to 1 mile of running track, as is almost in universal practice. The cost per unit mile became as follows:

A (3,116 plus $\frac{1727}{3}$ = 3,692 miles)	£ 331
B (320 plus $\frac{54}{3}$ = 338 ")	193

The revenues per unit mile were as follows:

A	£ 3,477
B	1,130

Unfortunately, there were no ton-mile or passenger-mile statistics available to measure accurately the amount of work done by the two undertakings, but, since A earned approximately three times as much as B per unit mile;

(a) if A carried the same volume of traffic as B per unit mile, or charged three times as much as B for each unit of traffic, A must have expended in maintenance more than B by approximately 60%.

(b) if A charged each unit of traffic at about the same rate as B, which was presumably the actual case, A must have carried approximately three times as much traffic as B, and A expended in maintenance only about 60% of the amount that B paid for maintenance per unit mile.

$$\left(\frac{331}{3} : 193 \right)$$

(c) or if A charged less than B per unit of traffic, or carried more than three times more than B, which is more probable than the above case, the maintenance cost thereof must have been less than 60% of that expended by B.

To take the London, Brighton and South Coast Lines, and the Highland Lines in 1922, for illustration:
(These lines will be called hereinafter A and B, respectively.)

A.	911 miles of track	355 miles of sidings
B.	569 " " "	78 " " "

The unit mileage of A and B were as follows:

A	911 plus $\frac{355}{3} = 1039$
B	569 plus $\frac{78}{3} = 595$

The cost of the maintenance of way and structures was as follows:

A	£ 831,000
B	185,000

The cost per unit mile was:

A	$\frac{831,000}{1,039}$ =	£ 808
B	$\frac{185,000}{595}$ =	311

The revenues per unit mile of A and B were as follows:

A	£ 6,260
B	1,980

Therefore, the ratios between the cost and revenue are as follows:

Cost ratio	808:311	= 259:100
Revenue ratio	8260:1980	= 316:100

The revenues do not always show the amount of work done, but A may be guessed to have handled at least 3-1/5 times as much traffic as B per unit mile, because the English lines as a whole ran in 1922 about four times as much train mileage as the Scottish lines (2,750,000:12,100,000), and the train load in Surrey and Sussex could not be lighter than in the Highlands in Scotland, the average train load of A being 105 tons as against 67 tons on B. Further, the fares were

much cheaper in England, where the highly developed system of cheap passenger fares, such as workmen's ticket, season ticket, excursion ticket, and other special ticket fares, extensively prevailed, than in North Scotland with the bulk of traffic moved at the normal fares.

The above figures clearly show that the cost of maintenance on the heavy lines was $2\frac{1}{2}$ times as much as on the light lines, but, as the traffic density was about 4 times as much as on the latter, the cost on the rich lines amounted only to 5/8 of that on the poor lines $(\frac{2.5}{4})$.

The fact, that the cost of the maintenance of way and structures varies very slightly with the volume of traffic, and, therefore, the cost per unit of traffic diminishes as the volume of traffic increases, is not confined to the British railways, but it is universally applicable with the same force.

Some illustrations will be given below on American railways.

The cost of maintenance is generally divided into three classes, as follows:

(a) General (salaries, office expenses, general superintendence, etc.

(b) Repairs of roads, bridges, signals and works.

(c) Maintenance and renewal of permanent way.

Item (a) is almost wholly independent of the volume of traffic, item (b) depends largely upon wind and weather, and item (c) depends partly upon wind and weather and partly

upon wear and tear. In the practice on the Pennsylvania Railway System, 1/3 of item (c) is made to depend upon natural causes, and 2/3 upon the traffic handled, and, on the above basis, 2/5 of the total expenditures in the maintenance of way and structures is estimated to vary directly with the volume of traffic, the remaining 3/5 increasing very slightly as it grows.

To take the Eastern Region of the Pennsylvania Railway System (hereinafter called AO, as one of the lines with the heaviest traffic density in the world, on the one hand, and the Southern Pacific Railway (hereinafter called B), with lines extending over sparsely populated territory, on the other, and compare the results for 1900:

A		3,864 unit miles
B		8,100 " "
A	Cost of maintenance per unit mile	$2,094
B	" " " " " "	1,020
A	Traffic density	2,500,000
B	" "	600,000

(Traffic density is computed on the basis of one ton of freight and one passenger, carried one mile.)

A	Cost of maintenance per unit mile per unit of traffic	$ 0.08
B	Cost of maintenance per unit mile per unit of traffic	$ 0.17

The heavier is the traffic density, the greater is

the cost of maintenance, but the latter does not progress in direct proportion to the former, the result being the decline of the per unit cost. However, it must be noted in the comparison of different railways that their diverse physical conditions may affect the per unit cost to some extent, and, consequently, some allowance must be made therefore, in the contrast of the respective per unit cost of maintenance. In the above illustration, it may not be wholly on account of A having handled four times as much traffic as B that the cost of A was one half of that of the latter, but the physical conditions of B may have been responsible, to some extent, for the greater cost per unit.

As regards the maintenance of rolling stock, the cost varies partly with the number of miles run, the greater part thereof being incurred for obsolescence, which is independent of use.

The more the stock is used before it becomes obsolete, the lower the charge for obsolescence is per unit of traffic. If all the stock could be worn out, through intensive use, before it had a chance of becoming antiquated, there would be no charge whatever for obsolescence.

Though the portion of the cost chargeable to wear and tear varies with the amount of work, as expressed in terms of the number of miles run, a heavier load per car does not increase the expenses for repairs and renewals in direct proportion. Therefore, well-filled cars and heavy trains will lower the charges for the maintenance of rolling stock, in respect of cars

and locomotives, per unit of traffic.

Finally, the cost of transportation and traffic is the expenditures made in the performance of work directly in connection with the handling and moving of traffic. It is composed mainly of labor and fuel expenses.

On the whole, the cost of station service, covering salaries, wages, supplies, etc., and the cost of watching and signaling on open lines do not increase directly with the growth of traffic. The cost of running locomotives and the other train expenses increase at a much lower rate than the traffic handled, particularly if additional traffic is conveyed in better-filled cars by long trains.

3. Constants and Variables

Railway cost consists of two main factors, the one of which remains constant irrespective of the volume of traffic handled or varies very little with the decrease or increase therein, and the other of which varies almost directly in proportion to the amount of business done. Therefore, it diminishes per unit of traffic continuously as traffic increases in volume, and, further, if cost were ascertained per unit of traffic, it varies under a different condition where more or less amount of traffic is handled. Consequently, cost fixed under one condition for the purpose of determining equitable charges ought not to be made the basis on which to determine charges to be applicable in the future when a different volume of traffic will be carried.

The larger the proportion of the constant factor in railway cost, the greater will be the profit and benefit to the

railways and the public to secure more traffic at whatever rates and fares above the variable elements of cost, which will become less as business grows larger. Since such charges are ones that can attract new traffic, through creation or diversion, have naturally nothing to do with distance or anything else, than the ability and willingness of traffic to pay.

Just what the proportions are cannot by any means be accurately determined, but the following computation, although made arbitrarily, chiefly with reference to actual experiences on most of the railways, may give some idea thereof:

Items	Percentages of Operating Expenses			Percentages of Total Cost		
	Both	Con.	Var.	Both	Con.	Var.
General	6.	6.		4.5	4.5	
Maintenance of way and structures	16.	10.5	5.5	12.	8.	4.
Maintenance of rolling stock	28.	10.	18.	21.	7.5	13.5
Transportation and traffic	50.	25.	25.	37.5	18.75	18.75
Capital cost				25.	25.	
Total	100.	51.5	48.5	100.	63.75	36.25

It shows that about 2/3 of the total cost constitutes the constant factor, only 1/3 being the variable factor. In other words, the total cost will increase by 2-1/3 times to handle five times as much as a given amount of traffic, if the additional business can be performed without additional capital

investment, because,

$$x = \frac{2C}{3} \text{ plus } \left(\frac{C}{3} \times 5\right) = 2\frac{C}{3},$$

in which C is the cost under a given amount of traffic and x the cost under the increased volume of traffic.

Whatever the proportions of the constants and variables may be, if there is unused capacity available for the handling of additional traffic, rate concession, through creating a larger volume of business, presumably promises, in spite of small contributions per unit of traffic, a larger total contribution to the net revenue.

4. Rates below Average Cost

Since the greater portion of capital charges and working expenditures does not vary in direct ratio to the volume of traffic under the gradual growth thereof, some services may be sold profitably below the average cost, provided that the extra sale results in the reduction of the general level of average cost, and that the profit derivable from the higher price exceeds the deficit arising from the sale below the new average cost.

To illustrate:

Total cost of a passenger railway (interest charges included)	$100,000
Constant factors	75,000
Variable factors	25,000
Number of passengers	50,000
Average cost per passenger	2

If 25,000 additional passengers are available,

Total cost	$112,000

Constant factors	$75,000
Variable factors	37,000
Number of passengers	75,000
Average cost per passenger	1.50

If the best price to obtain this additional traffic is 75 cents,

Total surplus from the excess of the higher price (2.00) over the new average cost (1.50) (2.00 - 1.50) x 50,000 =	25,000
Total deficit from the low price (.75) falling short of the new average cost (1.50 - .75) x 25,000 =	18,750

As the establishment of the fare of 75 cents, below the average cost per passenger, to secure an additional traffic of 25,000 passengers, causes a deficit amounting to $18,750, but the profit derived from the 50,000 passengers carried at the higher fare is augmented to $25,000 owing to the reduction of the average cost through the additional traffic more than offset the deficity, the fare below the average cost is entirely justifiable economically. Moreover, there is no one who will suffer an injury therefrom; the reduction in the fare for the additional 25,000 passengers is not by any means made at the expense of the regular-fare-paying 50,000 passengers. On the contrary, the railway derives an additional profit, and the communities get an additional service at a reduced price.

However, if the fare is reduced to 50 cents, instead of 75 cents, to attract the additional business, the deficit will amount to $25,000, and the railway will not profit anything from the handling of the additional traffic. If, further, the average cost per passenger remained constant at $2.00 irrespective of the increase in traffic, an attempt to secure new traffic at a reduced fare would not pay. Neither would it be profitable, if the average cost varied with the increase in traffic.

The above illustration leads to a conclusion that, so long as the law of diminishing cost operates, the securing of an additional traffic at any rate whatever is profitable both to the railway and the public to the injury of no one, if only such rate covers the additional cost specially incurred in connection with the handling of the additional traffic and leaves something, however, small, towards the joint charges. Such a rate as the above has of course no relationship with the distance of haul or other groups of traffic. It is absolute and not relative.

5. Limitation in Diminution

In the operation of railways, the capital charges and working expenditures grow less rapidly than the traffic increases, and, therefore, the larger the traffic is, the lower the cost will be per unit of traffic. Thus additional traffic can, as a general rule, be handled at smaller costs.

The law of diminishing cost, however, is subject to the law of diminishing returns at a point where the former has

reached the maximum limit. Where one of the necessary agents of production is fixed in quantity, and more of other agents are employed with a view to obtaining a larger output, the output will be increased, but sooner or later at a diminishing rate or increasing cost. The law of diminishing cost operates on railway operation until the normal capacity is reached, but sudden increase in traffic will necessitate heavy improvements and additions which abruptly incur a large outlay on the capital and current accounts. In the event of the gradual and regular growth of traffic year by year, it is possible to evade the application of the law of diminishing returns to some extent by increasing the normal carrying capacity by degrees instead of by leaps and bounds. In any way, however, the limit will be reached sooner or later, and the law will start in operation.

As traffic grows, the carrying capacity will be taxed more and more heavily, until a limit is reached through inconvenience and delay, longer running time, extra hours by locomotives and train staff, greater consumption of fuel, delayed claims, longer demurrage of freight cars, duplicate handling of freight, use of assistant engines for excursion and other trains, lighter home traffic, greater shunting charges, worse loading, increased damages, etc. A situation must arise sometime or other, in which the normal carrying capacity cannot be increased, either at all, or without incurring such a large expenditure as will raise the cost per unit of traffic. The continuous introduction of heavier locomotives, and the growing tendency for the

electrification of suburban lines illustrate the situation, as also do the successive construction of larger stations, larger freight yards, and more running tracks. All of these require the charging of a large amount against the capital and income accounts, for which the revenue will be absolutely inadequate for some years.

Theoretically, however, an outlay of this character ought to be spread over a number of years for the benefit of which it is made. With the spread thereof, coupled with the growth of traffic, the cost curve per unti will continue downward, without much intervening disturbance and breaking.

In America, throughout the entire history, the railway operation has, on the whole, been conducted on the basis of increasing returns. During each successive stage of development, railway facilities remained far in advance of traffic, owing largely to speculative interests, promoters' activities and public aids. Since 1906, however, the trunk-line carriers have been more or less subject to the law of diminishing returns, because of the sudden expansion of business in the territory served by them, but in the greater portions of the South and West the railways seem still to be benefited by the increase in traffic. This is particularly true of the freight situation, but, as regards the passenger service, they do not appear to have any appreciable benefit from the increase in the volume of traffic. In spite of the fact that the amount of passenger traffic has been relatively small, and the profit insignificant, the railways have had to pay more attention to their passenger than

freight service. They have considered it chiefly as an advertising medium for freight traffic, and, to some extent, as instrumentality for the development of culture, stimulation of intellectual activity, and territorial extension of political units. Moreover, a relatively large cost is necessary for the passenger service, owing to uneconomical requirements and operation. Speed must be maintained at high rates, regular service on regular schedules, regular connection with other lines, irrespective of whether the volume of traffic warrants the cost thereof or not, large terminals must be maintained, although passengers load and unload themselves, and luxury must be the feature all through. In passenger movements, less balance obtains than in freight traffic. Efficient and economical operation is impossible even as passengers increase. In the trainload, the passenger traffic has increased only by 40%, during the past 25 years, as against the freight traffic which has developed by 250% during the same period. The freight rate level sharply declined till the War with a greater profit generally, while the passenger fares have remained almost on the same level and yet the margin of profit seems to have been growing smaller and smaller.

B. Allotment.

Because of the inherent composition of railway cost of constant and variable factors, the cost of performing particular services does not remain constant, but varies with the difference in the conditions and circumstances under which it is carried out. Therefore, the cost determined for any particular

service cannot justifiably be made the basis of fixing rates to apply in the future. Further, because of the large portion of the total cost being constituted by the constant factor, and, consequently, the law of diminishing cost operates very extensively both for traffic as a whole and for particular traffic, the charge for particular services must be determined according to the ability and willingness of the traffic to pay and the expenses incurred specially and additionally in connection with the performance of these particular services. Therefore, since the ability and willingness and additional expenses have little to do with distance, the cost basis cannot be used for the construction of a rate system.

Moreover, even if the cost of performing particular services could be made theoretically the basis of a rate system, it is absolutely impossible to ascertain individual costs for that purpose, owing to the fact that railway cost is composed also of joint and additional factors.

1. Difficulty in Allotment.

It is admissable that there are some relative differences in the cost of supplying transportation under different conditions and circumstances, and in it can be sought the justification of making differential charges both in respect of the individual rates and the general level. The relative differences in cost depend upon diverse conditions, and are measurable at least for practical purposes, according to the speed of carriage, types of cars, quantity of traffic, proportion of bulk to weight, regular or spasmodic nature, distance, risk, capital charges,

etc. Although this differentiation is not at all theoretically supportable, yet it is serviceable in grading and rating different services and different kinds of traffic into a convenient number of groups for the purpose of determining definite relationships between them applicable broadly under ordinary conditions and circumstances.

However, it is entirely another matter to ascertain what is the exact cost of supplying a certain amount of transportation under particular conditions to find out a basis on which to build a definite system of rates. Some elements of the railway total cost are joint expenses, and others are additional expenses. Besides the impossibility of drawing a clear-cut demarkation line between these two factors of cost, they are so closely interrelated with the constant and variable factors that it is completely hopeless to attempt to analyze the total cost with a view to the ascertainment of individual costs.

(a) Joint Factor.

Although it is absolutely impossible clearly to divide the railway total cost into joint and additional factors, yet it is broadly true that some items of the cost are the result of performing several different services jointly, because some service is the necessary complement to other different services. For instance, train service in one direction involves necessarily corresponding movement in the opposite direction.

The economic principle requires that in the case of joint services the price for each service should be determined on the basis of the cost, jointly incurred in the rendering of

such services, apportioned according to the relative demand for the service. In the train service above referred to, if the demand in both directions is the same, the joint cost should be divided into two equal parts, and if the demand in one direction is intenser than in the other, the cost should be apportioned in accordance thereto. To determine just what the amount of the joint cost is, and the intensity of the demand is, constitutes an entirely different problem. In broad terms, however, it must be noted that any rate whatever that more than covers the difference in expense between running the existing facilities full and running them with idle capacity is better than no rate at all, that such difference in expense will consist of a much smaller cost per unit of traffic than the costs for already existing traffic, and that such rate can and must be much cheaper than the existing rates, to be determined entirely on the basis of the ability or willingness of the prospective additional traffic to pay. If it is fixed with reference to distance and to the relationships to the existing traffic, additional traffic probably will not be obtained, and the part of the facilities remains idle.

(b) Additional Factor.

Besides the joint factor of the railway cost, there are some items that are additionally incurred or do not acrue according as additional particular service is or is not performed. It is practically impossible generally to define what items of cost are directly affected by the performance of particular additional service, and to what extent they are affected,

but at any rate it is clear that any service rendered at rates less than the additional costs does not pay.

Additional costs vary highly sensitively according to different conditions and circumstances, and, therefore, they must be ascertained for each particular case, as occasion may require.

Further, it must be remembered that some of the items constituting the additional cost may pertain to the constant factor, and, consequently, the total additional expenses of a particular service may not vary directly with the amount of the additional traffic, as is very commonly the case.

The additional cost furnishes in the end the basis for the determination of the minimum limit of a rate. Any charge that does not cover the "out-of-pocket" cost and leave something for contribution towards the joint cost is not economically justifiable and reasonable, except in some extraordinary cases where industries with vast possibilities are to be started, raw materials conveyed ultimately to secure profitable tonnage therefrom, or social and humanitarian purposes are to be served.

2. Attempt at Allocation.

If some scientific principle could be formulated to allocate equitably among the diverse groups of traffic the joint expenditures incurred for the benefit of all or several groups of traffic, it would be serviceable greatly in the consideration of the railway charges as to their reasonableness, although the costs thus determined would not remain constant under different conditions and circumstances, and have no relationship whatever

with the distance of haul.

Unfortunately, however, individual costs including reasonable proportions of the joint cost are absolutely unascertainable, and the cost accounting so far available is at best mere approximation. It has never been scientifically developed in the railway operation, probably due to the highly complex nature of the cost itself.

(a) Joint Cost.

There is absolutely no dividing the railway cost between joint and additional expenditures, for some items which appear to pertain to the joint factor under one condition often should be treated as belonging to the additional factor under another condition, and vice versa. Therefore, any attempt to draw a line of demarkation in the total cost is general and not specific.

First of all, there are such expenditures as are incurred in respect of the traffic handled as a whole, where the two major divisions of business, freight and passenger, are carried on indiscriminately over the entire system, as follows:

(1) The interest on the capital spent on the construction and equipment of the running lines.

(2) The general charges in the working expenditures.

(3) That part of the cost of the maintenance of the running lines, which is due to wind and weather.

(4) That part of the cost of transportation and traffic, which represents the expenses of watching and signalling on the open lines.

Secondly, there are also expenditures which are

chargeable to large divisions of the entire traffic. A portion of the capital charges and of the working expenses is apportionable to the passenger traffic as a whole, for instance:

(1) The interest on the capital spent in the construction of the passenger stations, passenger cars, locomotives for the exclusive use of the passenger service, etc.

(2) The cost of service at the passenger stations.

(3) The cost of the maintenance and repair of the passenger station buildings.

(4) The cost representing the obsolescence of the passenger cars and locomotives.

The same may be said of the cost jointly incurred for the freight traffic as a whole.

It must be noted in this connection that the joint items for one of the two major divisions of business are not always due to the passenger or the freight traffic as a whole, but some of them may often be allotted to a particular group of traffic as a whole in either of the above major divisions. For instance, the portion of the capital charges and of the cost of maintenance, incurred in respect of some special rolling stock, namely refrigerator cars, etc., is the joint expenditure only for the freight that uses such stock.

The above is a general statement as to the basic idea of the separation of the joint factor from the total cost, and in actual cases each item composing the cost must be carefully examined under a given condition, to determine the joint expenditures in respect of the traffic as a whole, the freight

or passenger traffic as a whole, and the particular groups of traffic as a whole.

(b) Additional Cost.

As in the case of the joint cost, there is no absolute rule applicable to the determination of the items representing the additional cost under any conditions. Broadly speaking, however, the additional cost is the cost that is accrued specially in connection with the handling and moving of particular traffic, and, therefore, it represents the difference in the total expenditures which appears or disappears according as particular traffic is or is not carried.

There are some items of cost, which are additional within some joint factor, in the case of the volume of particular traffic being small but become joint automatically when the traffic grows large in amount, or, in other words, some items are variable from additional to joint, and vice versa, according to the volume of particular traffic.

The additional cost in carrying one excursionist from A to B is so trifling that it is properly apportionable to the joint cost for the passenger traffic as a whole, so long as the accommodation on the existing trains is available for the purpose, but the cost of carrying 10,000 excursionists from A to B may be greater than 10,000 times as much as the additional cost in carrying one passenger, because of the cost of running additional trains and the delay of freight trains. Moreover, if a heavy traffic of excursionists is to be handled continuously during a holiday season, the special supply of rolling stock or

the withdrawal of stock from the more remunerative sections may be necessary. In this case, a large additional cost is required for the interest on the capital invested in the newly acquired stock and for the provision for the obsolescence thereof, or for the loss incurred by refraining from running other remunerative services. The cost specially incurred in the carrying of this class of traffic becomes so large that it is to be regarded as the joint cost for this particular passenger traffic as a whole, instead of being included in the joint cost for the entire passenger traffic as a whole.

Again, in the event of developing suburban traffic, the additional cost at the outset will be only the expenditures in the operation of additional trains, but with the expanse of the traffic the purchase of additional rolling stock, construction of new sidings, duplication of running lines, etc., may become necessary, the result thereof being a large capital outlay. In the former case, the cost may be grouped as additional into the joint cost for the passenger traffic as a whole, and, in the latter, the capital charges and working expenditures particularly for this class of passengers are large enough to constitute the independent cost jointly incurred for this particular suburban traffic. The actual experiences in the suburban business of London, Paris, Tokyo, etc. plainly illustrate the situation above referred to.

(c) Division of Joint Cost.

After the joint costs are ascertained in some way or other for the traffic as a whole and for some particular groups of traffic as a whole, the next task consists in the division of

these costs among the units of the traffic concerned.

First of all, some standard measures of traffic are necessary in the segregation of the cost between the freight and the passenger services, which have entirely different traffic-unit measures.

One possible measure is the average weight of the passenger cars hauled per passenger carried. It is to be used to express the unit in terms of tons, in conformity to the measure for freight. However, as this method is so complicated in application that it is very rarely in use.

The other method is to make a passenger equivalent to a certain weight, say one ton. This is very arbitrary, but it is so simple and convenient that it is almost universally adopted.

As regards the division of the joint cost for each unit of traffic, as measured in either way above referred to, several methods are suggested. In the equal distribution, the cost is to be divided among all the units of the traffic concerned in equal parts irrespective of distance, or, expressed in other terms, in full share. As has been fully discussed elsewhere, the charges to be levied on shorter-distance traffic will become so high as to penalize it, and such traffic will be lost altogether.

In the equal mileage distribution, the cost is divided for each unit of traffic, then the share thus determined is again divided in each unit of distance, on the basis of its estimated ton- or passenger-mileage. In this system, the charge for each unit of traffic progresses very nearly in direct proportion to the increase in the distance of haul. However, it is, as

discussed before, not fair either economically or practically, because the cost of carrying one shipment of 10 tons 100 miles is cheaper than the cost of carrying 100 shipments of one ton 10 miles, and also because it penalizes longer-distance traffic.

In the tapering mileage distribution, the equal mileage distribution system is modified, so that the shares in the joint cost may be made relatively greater upon shorter-distance than upon longer-distance traffic, with a view to avoiding the above-mentioned difficulty. However, it is no less arbitrary and uneconomic, as has already been discussed.

All the above systems are based upon the hypothesis that the joint cost is possible of accurate apportionment among the different groups of the traffic concerned. As a matter of fact, however, it is not such a simple matter as it appears to be. One method of apportionment suggested is that the joint cost is to be divided among the several groups of traffic, according to their respective additional costs. However, this is not fair nor practical, for the reason that there may be conditions under which some traffic incurs extraordinarily high additional cost and other traffic involves very little additional cost, and that, above all, additional cost is not only difficult of ascertainment for each group of traffic, but variable with each different condition.

Another method is that the joint cost is to be divided among the different groups of traffic according to their values of service, which are represented by the difference between the costs of production and the prices at markets. As has been

stated elsewhere, it is neither possible nor practicable, because it is almost impossible to ascertain definitely the difference between costs and prices, and also because costs and prices are often affected to a great extent by the railway charges themselves.

The last method is the economic distribution, in which the joint cost is so allocated to each unit of traffic for each unit of distance, that the resultant charges, composed of the shares in the joint cost and the additional cost, may move all the traffic freely, attract new business, and at the same time cover, as a whole, exactly the total sum of the capital charges and the working expenditures. Under this system, however, cost does not primarily determine the reasonableness of charges, but they are automatically fixed in such a way that the traffic may freely move, the cost being the result of the operation. In other words, it may be said that revenue from economic charges controls cost, instead of cost determining charges. Economic rates and fares are made chiefly according to the willingness of the traffic to pay, which is largely determined by various competitive forces at work, with occasional reference to the ability of traffic to pay, which is conditioned upon the place utility created by transportation under normal and non-competitive circumstances.

(d) Impossibility and Futility.

It is altogether impracticable to take a number of necessarily uncertain and inexact amounts as the basis on which the whole of the charges of a railway undertaking should be

distributed. There is absolutely no scientific method of allocating the cost amongst the different units of traffic. A reasonable charge, it is generally contended, must cover the additional expenses and bear a fair share in the joint costs, but how can this fair share be determined? If rates should be made on the cost basis, as is commonly held, there would be absolutely no reasonable rate.

Emphasis must be placed on the fact, which is generally disregarded or overlooked, that rates must at any event be made in advance, and the cost of the service performed in carrying the traffic at such rates is roughly ascertainable only afterwards.

If cost were apportionable, and rates were made on the basis thereof under the estimate of 1,000 additional tons of traffic, the profit would be less than expected in the case of the actual extra traffic amounting only to 500 tons, and it would be greater in the case of the actual extra traffic increasing to 5,000 tons. The rates thus determined would be unfair and unreasonable in either case. How much more or less the traffic will be is a question that no one can foretell accurately. To base rates on cost would be foolishly attempting to find one unknown quantity by using another, and, therefore, the distance principle, which entirely depends upon the cost basis for support, can by no means be justified.

(c) Attitude of Interstate Commerce Commission.

In conformity to the general public sentiment, and the trend of legislation toward the restriction of discrimination,

no matter whether it is economically justifiable or not, to a minimum limit, the Interstate Commerce Commission has adopted the cost basis or the distance principle to a growing extent in its regulation.

In 1915, the Commission required Class I railways to divide in their reports the operating costs between the passenger and freight services, but left to each railway power to allocate the expenses common to both classes of service as it pleased. The result was that the methods adopted by them varied so widely that the figures obtained were of no statistical value.

In 1917, the Commission ceased to require the allocation of the costs, and each railway took to the allocation for its own information. In 1919, however, the Commission again took up the matter, and required Class I carriers to separate their costs, on the basis of the rules, which were laid down after carrying out an elaborate study and testing the results of the various methods of apportionment which had actually been employed before.

Consequently, since 1920, each Class I carrier has had to classify each of its various items of disbursement relating to the operating account, according to the relation which such item is supposed to bear to the freight service and to the passenger and allied services. Each item must have its character appropriately indicated on the carrier's records, according as it relates (a) solely to freight services, or (b) solely to passenger and allied services, or (c) in common to both freight, passenger, and allied services, or to neither freight service nor passenger and allied services. Appropriate subaccounts to

provide for the above-mentioned classification shall be set up under each of the primary operating accounts, and the results of such classification are to be shown in the annual report.

As regards the items common to both freight and passenger and allied services, they are to be apportioned between the two classes of services, in accordance with the stipulated rules - in proportion to the amounts in certain directly allocatable items.

In the application of the rules, the carriers are required first to assign to freight or to passenger service, including allied services, the operating expenses that are directly or naturally assignable, and to carry this direct assignment to the fullest extent that is practicable.

The whole method prescribed is altogether arbitrary, and the result is mere approximation. It is undoubtedly serviceable in the comprehension of the total financial situation of each reporting carrier, but it is entirely valueless in the fixation of individual charges, because the apportioned costs are only the rough estimates for the two major groups of traffic.

C. Trend of Cost Basis.

The preceding discussions point logically to a conclusion that the railway cost does not permit of a definite distribution among the different units of traffic for the different units of distance, that even if it were distributable it would vary under diverse conditions, and that, therefore, it does not constitute a theoretical basis for the determination of

reasonable and equitable individual rates. The distance principle, from which distance rates evolve, is contrary to the tax principle. Railway charges, if they are to be equitable and just, must be determined according to the requirements on both demand and supply sides. They are to be fixed primarily by reference to the willingness of traffic to pay, which is determined largely by the forces of competition, and they are reasonable when they, as a whole, equal the total expenditures plus the interest at the normal current rate on the capital employed, although the entire cost is, as a matter of fact, adjusted to conform to some extent to the revenue from the charges determined in the manner above referred to. If cost is to be used as a factor in rate-making, it should be employed as the approximate minimum standard for fixing rates for particular units of traffic for particular length of haul, in view of the general rule that any rate cannot prevail in the long run below additional expenses.

From the point of view of expenditure, the features are a large preliminary investment of capital, which, once spent, is fixed and irrecoverable, and a large current outlay of income in the maintenance and operation of the railway as a whole, independent in a great degree of the volume of business and independent almost wholly of the particular categories and items of traffic carried by it. From the point of view of revenue, since the larger portion of the entire cost belongs to the railway as a whole, it is impracticable to determine individual rates with any approach to accuracy on the basis of what the

particular services cost. Further, if it were, it would not be expedient or in the public interest, because to charge against each category and item of traffic not only its own additional cost but also its full share in the joint cost would mean to shut out from transportation much traffic that in the interest of the community ought to be carried. It would mean, further, a great restriction of the potential traffic, and consequent higher rates on the traffic actually carried.

Railways in every country have followed the same general line of development. Beginning with small traffic at high rates, they have gradually by lower and lower rates attracted a larger and larger volume of traffic, partly articles of lower and lower value, partly articles of medium value, carried over longer and longer distances, into the fixation of rates for which the "cost of service" has entered only to the extent that rates could not, broadly and in the long run, be put lower than the point, at which the amount received for transportation covered the additional cost of the special service involved. Clearly, no regulatory body can justifiably use cost as an all-important basis for measuring the reasonableness of individual rates.

Apart from the theoretical standpoint, the Interstate Commerce Commission has gradually adopted to a growing degree the cost principle, particularly since 1910, as the test of reasonableness for both the general level of rates and individual rates, and also the distance principle in the adjustment of complaints as to discriminations, either on the belief that the scientific application of the cost principle results in distance

rates, or from a policy of desperation. The cost basis has become all the more important in the wake of the recent legislative tendency in respect of the long and short haul principle, railway valuation, security issuing, and accounting supervision.

However, the cost basis has been employed largely as the test of reasonableness for the general levels of rates, although it was often referred to in measuring individual rates, and constructing distance scales.

Up to the beginning of the present century, the problem of general rate levels was a matter of little concern, for the revenue per ton per mile had been continuously on a downward trend, for instance, from 9.41 in 1890 to 7.29 mills in 1900, probably due to the competitive system of rate-making, increasing efficiency in operation, and legislation in some states affecting particular rate structures.

About 1900, the public began to complain of the advances in rates, and in 1903 the railways applied to the Commission for an increase in the rates on grain, grain products, packing-house products, and dressed meats, on the ground that the unrestricted competition had cut down those rates unreasonably, and that the total cost of service had greatly risen. The Commission permitted the increase on certain particular commodities moving only in the Official Territory. 9 I.C.C. 382.

In 1907, certain state legislatures enacted maximum passenger fare statutes reducing from 3 to 2 cents per mile, and in many states maximum freight rate scales were also stipulated by law. The carriers' complaint of the resultant deficit in

their revenues was rejected on the ground of inefficiency in operation and inaccuracy in accounting.

In 1910 the railways in the territory from the Atlantic Seaboard to Chicago and St. Louis proposed an increase in their rates, for the reason that the total charges had remarkably risen owing to the constant advance in the cost of labor and material since 1901, and the railway credit was being seriously impaired due to the insufficient revenues, but the proposal was not accepted, because further economy in operation was possible, and that it was a fallacy that a credit position was affected by the rates charged. 20 I.C.C. 243; 307.

In 1914, the eastern carriers again proposed an increase in the general rate levels, because cost had been rapidly increasing and credit destroyed, and the Commission had this time to grant it for the railways only in the Central Freight Association Territory. 31 I.C.C.351. Later, however, it allowed the other carriers in the East to raise their rates except for certain commodities. 32 I.C.C. 325.

In 1915, the Commission refused the similar proposal of the western carriers except for coal and a few other important commodities. 35 I.D.D. 497. However, soon afterwards, they were permitted to raise their passenger fare from 2.4 to 2.6 cents.

In 1916, in consequence of the war, the industry became prosperous, the demand for railway service greater, and the carriers' profits larger.

In 1917, however, the cost of labor and material had

disproportionately advanced, and the Commission approved a rise in the class rates and the rates for bituminous coal, coke, and iron ore in the East and South, the western carriers being refused an increase on the ground that the increasing tonnage would more than compensate the advance in the cost. 45 I.C.C. 303.

In 1918, an advance was allowed in the eastern rates for the commodities that had been excepted in the adjustment of the previous year.

After the participation in the War, the increased labor cost was partly met by an increase in the rates and fares under order of the Director-General, and partly by taxation.

In 1920, the Transportation Act was passed, and a "rule of rate making" was rendered in a statutory form. Accordingly, the Interstate Commerce Commission started an extensive investigation as to the general rate levels, on the four rate groups, Eastern, Southern, Western and Mountain-Pacific, with a view to determining a reasonable rate level for each of these groups, so that a return of 6% might be derived therefrom on the tentative valuation of the properties. The result was a 20% increase in the passenger fares and milk and cream rates for all the railways, 40%, 35%, 25% and 33-1/3% increases for the Eastern, Western, Southern and Mountain-Pacific, and interterritorial carriers in their general freight rate. 58 I.C.C. 220.

The same levels of rates were made by the Commission to apply also to intrastate traffic, and the position was

upheld by the Supreme Court. R. R. Commission of Wisconsin V. C. B. & Q. R. R. Co., 257 U.S. 563.

Soon afterwards, deflation came about and hit agriculture particularly severely, and the freight rates on agricultural products were made the target of dissatisfaction through political intervention.

About 1921, the Commission instituted investigations into the situation, and held that railway rates should be based upon cost, and that they "did not depend at all upon the fact of whether the customers were making or losing by their business." However, to appease the complaints which dragged the rate situation into politics, it recommended the reduction of 20% on the long-hauls of live-stock where 50 cents for 100 pounds was exceeded. 63 I.C.C. 107.

Later, the western carriers were ordered to reduce 13½% on wheat and hay and 21 per cent on coarse grains. 64 I.C.C. 85. Reductions were also ordered on certain commodities in the South, under the guise of restoring the formerly existing rate relationship. 66 I.C.C. 68. In addition, the carriers made the voluntary reductions of 10% in all the rates on farm, ranch and orchard products, in order to pacify the growing demands and complaints, made without regard to the economic requirement on the supply side of transportation.

In 1922, the Commission started another investigation on the general levels for all the commodities, and ordered the uniform reduction therein of 10%, except on the commodities the rates for which had already been reduced 10% through the voluntary action on the part of the railways. The Commissioner's

contention in this relation was that the reduction would result in the increase of tonnage with the corresponding decrease in the cost. In this order, however, the Commission changed its former attitude, and took the credit situation of the carriers into full consideration, attempting to keep the rate levels sufficiently high to insure adequate transportation for the public, and the successful continuance of the private operation of the railways.

Since 1920, on the whole, the Interstate Commerce Commission has interfered with the rate situation only in respect of the general levels consistently on the basis of the cost principle, leaving to the carriers the task of making individual rates as they pleased. However, then complaints arose of discriminations, the Commission has tended to adjust the rates involved in closer conformity to the cost and distance principles, as contained in the Congressional mandate, culminating in the recent establishment of the distance rate scale to be applied uniformly in the south.

During the four years, following the incorporation of the rule of rate-making into the Transportation Act, the Commission had particular reliance upon the cost basis in adjusting the rates, but, insomuch as cost depends upon the volume of traffic actually handled, the expected results were not attained owing to the economic depression, decline in traffic, and relocation of industry after the war. In other words, the rates considered as reasonable by the Commission proved to be unreasonably low, from which the carriers on the whole seriously

suffered and will continue to suffer. Moreover, the insistent demand of agriculture, not being satisfied with the voluntary reductions made by the carriers in agricultural rates, resulted in the Hoch-Smith joint resolution in the 1924-25 Congress, which in effect called for the fixing of rates on the basis of the value of service principle without regard to the needs on the side of the suppliers of service. In the same year, the Gooding Bill was produced to make the long and short haul principle applicable in an almost absolute manner, restricting the relief only to the case of the competition of circuitous routes with direct rail routes. On the other hand, the carriers have on the whole been struggling under inadequate revenues owing to the public interference with their rates and the pressure from the agricultural sections.

D. Attitude of Supreme Court.

The attitude of the Supreme Court as evidenced in the numerous decisions on the cases involving rate disputes has been, on the whole, invariably for the cost basis in respect of the reasonableness of the general level of rates and individual rates, from the legal standpoint, although the cost principle was often rejected for social reasons in the case of the determination of the reasonableness of individual rates.

As a basic principle, the cost of service plus the fair return upon the value of property has been considered as a sole test of reasonableness, applicable to the examination of both rate levels and individual charges. Therefore, it has been made a definite legal principle that any rate, that was ordered

by public authority, and deemed to be lower than the cost of service and the fair return, results in the unlawful confiscation of the private property. The test was based on the cost principle with reference to the infringement of the constitutional right, but the economic considerations were not wholly ignored. In 1898, the Supreme Court held that what a railway company was entitled to earn was a fair return upon the value of that which it employed for the public convenience; on the other hand, what the public was entitled to demand was that no more be exacted from it for the use of a public highway than the services rendered by it were reasonably worth. 169 U.S. 466. A fair return is of course a return which is relatively equal to what money devoted to other like investments will earn. 238 U.S. 153. In other words, it is to be determined according to the character of investment and the rate of interest prevailing. 262 U.S. 276. As regards the reasonable value of property, there have been numerous decisions rendered, which, though various in details, appear to have been based on the present value of the existing property employed.

In spite of the recent contention particularly among the agricultural people and the politicians representing their interests that rates should be based upon the value of service, the court has not changed its attitude, and adhered to the cost principle. In the Banton v. Belt Line Railway Company, decided by the Supreme Court of the United States on May 25, 1925, passing a judgment upon a controversy involving the validity of an order of the New York Public Service Commission,

prescribing a 5-cent joint street car fare in New York City, and requiring the issuance of transfers, it was held that the State was without power to require the traffic covered by the fare enjoined to be carried at a loss or without a substantial compensation over its proper cost .... It would be arbitrarily unjust to charge to that class of traffic only the amount by which the operating expenses were, or would be, increased by adding that to the other traffic carried .... While the carrier had no constitutional right to the same rate or percentage of return on all its business, the State might not select any class of traffic for arbitrary control and regulation. Broad as was its power to regulate, the State did not enjoy the freedom of an owner.

The above is the practical reiteration of the decisions in the Northern Pacific Railway Company v. North Dakota, 236 U.S. 585; the Norfolk and Western Railway Company v. Conly, 236 U.S. 605, et., in which it was maintained that the due process of law was denied and property taken without just compensation in the event of the State requiring the transportation of persons or particular property at non-compensatory rates, regardless of whether the burden be made up in other forms of traffic.

On the whole, therefore, the attitude of the court has been that either the general level of rates or individual rates must be such as cover the cost of service plus a fair profit, and that rates may not be made below this level even though it be said that the value of service would justify it.

However, the court has recently recognized the

difficulty to be actually met in the application of the cost principle. Sometimes it held vaguely that there were many factors to be considered - differences in the articles transported, the cars used, the risk assumed, the value of service .... 236 U.S. 585. At other times it stated that the reasonableness of rates, which was to be determined on the cost basis, was a question of facts, which was one of the duties of the tribunal specially created therefor (the Interstate Commerce Commission) to decide and that the decisions passed by the tribunal should not be subjected to review by the court, unless there existed a clear error in the consideration of those facts, referring to J. Willis, who passed a judgment in connection with Part II of the Railway and Canal Traffic Act (the reasonableness of charges), as follows:-

"If this court once attempts the hopeless task of dealing with questions of this kind with any approach to mathematical accuracy, and tries to introduce a precision which is unattainable in commercial and practical matters, it will do infinite mischief and no good." 206 U.S. 441.

The court, however, has not always stuck to the cost principle in respect of individual rates, but it occasionally departed therefrom for social reasons. It was held that a railway, the enterprise of which was of quasi-public nature, should furnish reasonably adequate service, even though some particular services were to be conducted at a loss, so long as the rates as a whole remained sufficient to cover the necessary total cost. 54 Colo. 64. 206 U.S. 1.

Thus the tendency in America has been decidedly towards the closer adherence to the cost principle in the regulation and legislation. The same is true in Great Britain to some extent, although it seems that the economic principle still prevails extensively, and the rate situation is almost completely free from political interference particularly in respect of the reasonableness of individual charges. There is still in effect a provision of Section 27 of the Railway and Canal Traffic Act of 1888, empowering the Railway Commission to prohibit higher rates for shorter distances, but it does not by any means require the Commission to prohibit such practices. As a matter of fact, no case has actually been decided under this section of the act.

However, on the whole, the same tendency is discernible in the decisions of the Railway and Canal Commissioners in matters of discriminatory rates. They have often attempted to ascertain the cost of service, to base their decisions on charges in dispute largely, if not entirely, on the cost basis. For two generations the parliamentary committees and royal commissions that were created from time to time to formulate policies regarding railway charges, were incessantly implored to compel the railways to charge on the cost basis. The result has been the insertion of a provision in the Railways Act of 1921, Sections 58 and 59, stipulating that the Railway Rates Tribunal sees that rates and charges be fixed so as to earn a revenue sufficient to enumerate the invested capital at the pre-war rate (at the rate of the net revenue in 1913).

As regards the distance principle, a rule incidental

to the long and short haul principle is also incorporated in the said Act (Section 52), empowering the Railway Rates Tribunal to prohibit competition over routes circuitous by more than 50%, but it remains to be seen what, if any, use the Tribunal will make of the power in conjunction with the question. Most probably, it will remain merely in name rather than go into actual operation.

IV. WILLINGNESS OF TRAFFIC TO PAY.

A. Fundamental Principle.

Railway rates and fares must at all events be such as to enable commodities and persons to move from place to place freely in conformity with economic and social requirements, to the best interest of the industry and the public at large. If rates and fares are to be such, it necessarily follows that they must not be made on either the cost of service or the length of service basis. The cost of service cannot be ascertained with any approach to accuracy, and even if it were determined precisely for each unit of traffic for each unit of distance, it would certainly have nothing to do with such rates and fares as permit of the free movement of traffic. The length of haul is also quite independent of what the traffic is able or willing to pay for free movement.

Although rates and other charges must be determined according to the ability or willingness of the traffic to pay, and have no relationship whatever with the cost of performing service, from the purely theoretical point of view, yet they should be such as, under normal conditions, will as a whole yield a reasonable profit to the carriers, as well as a benefit to the shippers and passengers. In other words, rates are fundamentally not at all controled by cost, and cost must be adjusted to the revenue from such rates, but cost must be taken into consideration, to some extent, in the determination of the charges as a whole, in order to enable the railway to continue its services satisfactorily.

The railway capital must under any condition receive interest thereon, and if it does not from the rates charged, then it should, even out of general taxation. However, whatever difficulty there may be in bringing about a compromise between rates and fares and costs, and no matter whether there is or is not relationship between rates and distance, the principle of equity requires equitable concession in rate-making to the weaker. The problem is, therefore, to devise a principle of rate-making, whereon charges are made higher on the rich --- traffic with the advantage of geographical location close to the market, valuable freight, well-to-do passengers, and the like --- on the ground of their abundance, and lower on the poor --- traffic having to travel far to find the market, bulky articles of small value, low-class passengers, and so forth --- by reason of their poverty.

The above-mentioned system of rate-making is often condemned as a method of extortion, but the idea is entirely erroneous, as will be discussed later. On the contrary, it is the only economic principle of developing commerce and industry.

There could be absolutely no explanation on the part of the distance principle as to the fact that the total railway revenue is made up of the rates, which in the case of traffic unable or unwilling to bear a high rate, are so low as to cover hardly more than the out-of-pocket expenses; which in the case of medium-class traffic, cover both the apportioned and unapportioned costs; and which, finally, in the case of

traffic able and willing to pay a higher rate, after meeting that traffic's own out-of-pocket expenses, leave a large and disproportionate surplus available as a contribution toward the unproportioned expenses of the poor traffic, which such traffic itself could not afford to pay. At all events, railway charges ought to be such as the respective traffic is able and willing to pay for free movement, and if they happen to prove, after application during a certain period, to have been sufficient as a whole to meet the necessary cost, it is all the better. From the idealistic point of view, when the profit resulting from those economic rates is greater than the level generally considered as reasonable, the disposal of this excess may be subjected to public regulation, and when the profit is smaller, or the rates resulted in a loss, public aid may be granted to meet the unfortunate situation, for which no one is responsible.

B. Willingness to Pay.

The railway rates and fares, which are economically reasonable and socially just, ought to be those that are determined according to the ability and willingness of traffic to pay, with incidental reference to the aggregate cost of the carrier rendering the services. The problem in this relation is what determines such ability and willingness, what the actual benefit is, how the ability and willingness bases are regarded by the regulatory and judiciary agencies as the test of reasonableness, and finally, what disadvantage, if any, there is in this principle of rate-making.

1. Definition.

Rates and other charges that allow traffic to move freely and, furthermore, encourage the normal growth of industries and communities must, as a matter of course, be such as the traffic is not only able but also willing to bear. In other words, the best charges in the interest of the carriers and the public are not those which the traffic neither can, nor consents to, pay.

The principle of charging what the traffic will pay has been construed from several different. It is often regarded from the standpoint of the value of service rendered in the transportation of the traffic as defined to be the difference between the price of the commodity at the point of the shipment and the price at the destination. This concept is altogether deceptive, for the difference above referred to depends more or less upon the transportation charge paid, as has already been discussed elsewhere. It is moreover, very difficult of application to the determination of the value of service which a passenger derives from transportation.

Another construction is based on what is generally termed the ability of the traffic to pay. According thereto rates must be fixed only by reference to what the traffic can bear. This idea, however, must also be set aside, because the rates based thereon will be applicable only to non-competitive cases, for the railway can thereby charge just as much as the traffic can afford to pay. As will be discussed later, railway charges are so made as to encourage the development of future

traffic, as well as to attract traffic from rival carriers and to prevent diversion thereof. Differentiation must definitely be made between ability and willingness.

It may be true that such traffic as is entirely free from competitive forces, either transportation or market, can be made to pay just as much as it can pay, but it must be remembered that rates at which traffic will move and develop are certainly not the largest total combination above the out-of-pocket expenses. The ability of traffic to bear sets up the maximum limit of the individual rates.

The difference between the ability to pay and the willingness to pay will be clearly shown in the following instance, which actually took place, (PP. 116-117, Hadley's "Railroad Transportation".):

"On the coast of Delaware, a few years ago, there was a place, which we shall call X, well suited for oyster-growing but which sent very few oysters to market, because the railway rates were so high as to leave no margin of profit, The local oyster-growers represented to the railroad that if the rates were brought down to one dollar per hundred pounds, the business would become profitable, and the railroad could be sure of regular shipments at that price. The railroad men looked into the matter. They found that the oyster men could pay one dollar per hundred pounds to the railroad and still have a fair pfofit left. If the road tried to charge more, it would so cut down the profit as to leave the men no inducement to enter the business. That is, those oysters would be able to bear a rate of one dollar per hundred pounds and no

more. Furthermore, the railroad men found that if they could get, every day, a car-load, or nearly a car-load, at this rate, it would more than cover the expense of hauling an extra car by quick train back and forth every day, with the incidental expenses of interest and repairs".

The rate of one dollar per hundred pounds was determined solely by reference to the ability of the traffic to pay, with the incidental consideration of the cost requirement of the railway.

"So they put on the car and were disappointed to find that the local oyster-growers could only furnish oysters enough to fill the car about half full. The expense of the road of running it half full was almost as great as running it full: the income was reduced by one-half. They could not make up by raising the rates, for these were as high as the traffic could bear. They could not increase their business much by lowering rates. The difficulty was not with the price charged, but with the capacity of the local business. It seemed as if this special service must be abandoned.

One possibility suggested itself. Some distance beyond X, the terminus of this railroad, was another oyster-growing place, Y, which sent the oysters to market by another route. The supply at Y was very much greater than at X. The people at Y were paying one dollar per hundred pounds to send their oysters to market. It would hardly cost twenty-five cents to send them from Y to X. If the railroad from X to Philadelphia charged but seventy-five cents per hundred pounds on oysters which came from Y, it could easily fill its car full.

This was what they did. They then had half a car-load of oysters grown at X, on which they charged one dollar, and half a car-load from Y, on which they charged seventy-five cents, for exactly the same service".

The rate of seventy-five cents was fixed on the basis of the willingness of the traffic to pay. The oyster-growers could afford to pay one dollar from Y to Philadelphia, and moved on the shorter railway route, which gave the rate of one dollar according to their ability to pay. Of course, the ability to pay had nothing to do with the routes or the distance of haul to the market, and if the oysters were to be carried over the longer route, the total charge must also be one dollar. Since the rate from Y to X was twenty-five cents, what the traffic was willing, and consented, to pay from X to Philadelphia must necessarily be seventy-five cents. In other words, rates can be made on the ability to pay, where the traffic is free from competition and there is not much proppect of its future growth, and rates are economically determined on the basis of the willingness to pay, or what the traffic is not only able but has consented to pay, where it is under the control of competitive forces or it has ample potentiality of future expansion in rivalry with already developed and well established market competitors.

"Of course, there was a grand outcry at X. Their trade was discriminated against in the worst possible way --- so they said --- and they complained to the railroad. But the railroad men fell back on the logic of facts. The points

were as follows: A whole car-load at seventy-five cents could not pay the expenses of handling and moving; at higher rates than seventy-five cents they could not get a whole car-load, but only half a car-load, and half a car-load at the one-dollar rate (the highest charge the article could bear) would not pay the expenses. Therefore, on any uniform rate for everybody, the road must lose money, and they would either be compelled to take the oyster-car away altogether, or else get what they could and fill up at seventy-five cents. There was no escape from this reasoning, and the oyster men of X chose to pay the higher rate rather than lose the service altogether."

The value basis is defective because of the fallacious conceptof prices and costs and the inapplicability to the passenger service, and the ability basis is also unacceptable because of the failure to comprehend the ubiquitous competitive forces and the future consideration of the railway. However, the above-mentioned bases may sometimes be used as the standard for determining the absolute mqximum of rates and other charges for particular traffic. It is hardly necessary to say that any traffic could hardly be expected to move at any rate that would make the price at the destination to exceed the prevailing level on the market. Such traffic would not be carried at all, or some substitute therefor would be placed on the market. Nor could any traffic move at a rate that would not be worth the service and be above the ability thereof to pay.

If the railway were in a position to enjoy the absolute monopoly of transportation and disregard the development of its proppective traffic, and to charge as much is this traffic, that is offered for transportation, is able to pay, then the ability of traffic to pay could be made the sole basis on which to build up its rate system. As a matter of fact, however, the railway cost consists of constant and variable factors, and the more the traffic is in amount the more profitable will the operation become, according to the economic law of increasing returns, not to mention the benefit to the industry and to the public at large.

The only basis for making economic rates is, therefore, the willingness and, to a limited extent, the ability of traffic to pay. It is meant thereby that the test of the reasonableness and justice of an individual rate consists in the standard that traffic moves freely and tends to develop under the rates which it is perfectly able and willing to pay.

Willingness to pay is and must be the only sound basis for price determination in any competitive business enterprise, where the total cost of production is composed largely of constant expenditures and the return on the capital invested increases in geometrical progression as business grows.

Prices for cotton-seed, the economic value of which is a matter of recent discovery, cannot be determined except upon the basis of the requirement on the side of demand, that is, what the commodity is willing to pay. In the selling of

services of lawyers, dentists, surgeons, and other professional experts, the charges for the well-to-do may be many times those for the poor, for exactly the same skill and care administered. At department stores, shoes and frocks at the beginning of a fashion season may be sold at top prices, and they are gradually reduced as the end of the season approaches, the final slash being marked by a clearance sale. Identical goods are sold to persons of different degrees of willingness to pay, at different prices.

As regards the supply of electricity for lighting purposes, ten cents per unit will be the maximum which the competition of gas and other illuminants sets, and the company will charge this amount in view of the absolute ability of the consumer to pay. On the other hand, the company may be in a position to sell profitably its surplus power, and have to quote two cents per unit to induce the users of steam power, gas engines, and the like, to adopt electricity as a substitute. In the establishment of an electrical enterprise, the primary purpose of which is the supply of light, a large capital is required for short-lived machinery and mains, and the plant and staff must be so maintained as to be capable of dealing satisfactorily with the maximum demand. This demand --- the peak of load --- comes only for about two hours during the day, and that particularly during the winter months of the year. For twenty hours out of twenty-four hours, the bulk of the plant, etc. remain idle, but interest, depreciation, and other standing charges are running on all the time. Such a service

cannot but be expensive to give. There is, however, a way to make it less expensive, so that the primary and secondary purposes of the enterprise may best be met. If consumers can be induced by the low charge of two cents per unit to take electricity for power, they will use it in the daytime, and, to some extent, even in the dead of night, when the machinery would otherwise remain idle. The two cents, which is the rate that the traffic is willing to bear in the case of railway charges, will more than cover the extra cost of fuel, and will help to dilute the general --- joint and constant --- expense of the whole undertaking. The standing charges, which constitute the greater bulk of the whole cost, instead of being charged on, say 1,000,000 units, are now spread over 6,000,000, and the cost of supply per unit is, therefore, proportionally decreased. The increase of the low-charged power customers, resulting from making rates in accordance with their willingness to pay, is the only means by which the lighting customers can hope to see the charges made to them reduced. When the supply is increased from 1,000,000 units to 6,000,000 units, the cost of production per unit will be reduced approximately by half, according to the law of diminishing cost, as follows:

1,000,000 units	cost	4 cents per unit.
5,000,000 units (additional supply)	cost	1½ cents in addition per unit
6,000,000 units (total supply)	cost	$1\frac{5.5}{6}$ cents per unit.

$$\left\{ \frac{(4 \text{ x } 1) \quad (1\tfrac{1}{2} \text{ x } 5)}{6} \qquad \frac{1\ 5.5}{6} \right\}$$

The low-charge supply will leave a fraction over and above its extra cost for contribution toward the payment of the interest on capital, and the light consumers will ultimately be given the benefit of the above-mentioned contribution in the form of reduction of their charges. Without the wholesale production made possible by attracting a great volume of low-class business, through the rates that it is not only able but also willing to pay, prices could never be lowered.

Again, suppose a motor driver takes a guest to a shooting lodge twenty miles from the station, and the charge is $10.00. On the way back, the driver overtakes a pedestrian and carries him to the station for $1.00, which he is willing to pay for the service and which more than covers the cost of the extra gasoline particularly consumed in taking that passenger, and over which he would rather walk than ride. Undoubtedly, it is no injury whatever to the original hirer of the car that it earns the extra dollar. Clearly, the pedestrian is only brought in by the exceptionally low rate, and there could be no question of making him pay half the cost of the carriage both ways.

In the case of railway charges, a shipper of coal will be perfectly willing to pay the railway a rate of ten dollars per ton from A to B, if he is able to pay it, and if no competing company offers him better terms, but on the other hand, he will not be willing to pay a rate of more than eight

dollars per ton for a longer distance on the same line from A to C, if another company quotes eight dollars from A to C on its own line, quite apart from his ability to pay ten dollars for it.

Rates in some cases may, in order to retain the traffic, or to develop future traffic, have to be reduced to a point where they do no more than cover the additional expenses; and in other cases it is entirely reasonable and possible to keep up rates to a point where they yield much more than the normal percentage of profit, to meet the interest on the capital invested.

After all, in railway service, as in many other competitive commercial affairs, prices are based not on the cost to the producer but on the willingness of the customer to pay, subject to the limitation that the lowest rate cannot in the long run remain below the additional cost of the service rendered, and that all the rates as a whole must in the long run cover all the costs, constant and variable, and joint and additional, of all the services rendered.

Although the railway undertaking is subject to public control as to its rates and other charges, etc., because of its being monopolistic and quasi-public by nature, yet rates based on the ability and willingness of traffic to pay are absolutely justifiable from both economic and social points of view. If rates, which are determined according as the traffic is willing to pay, are to be graded lower by legislative compulsion in the light of the distance principle,

simply because longer-distance rates, which are controlled by competitive and other forces, are lower than the former, there will be no point at which the interest on capital can emerge. Reversely, if the longer-distance rates are to be raised proportionately to the shorter-distance rates, without regard to the willingness of the longer-distance traffic to pay, the railway will lose such traffic, resulting in the reccuping of the loss upon the shorter-distance traffic. All the legislative, administrative, and judicial compulsion to make railway charges according to the distance principle is based upon the hopelessly mistaken idea that equality is equity. To serve the best interest of all concerned, rates and fares ought to be determined primarily on the basis of the willingness or ability of traffic to pay, as the case may be, which depends not upon the distance of haul or the cost of service but solely upon its capacity to pay, the competitive forces at work, and the future development thereof. Private gain based on the economic law is by no means an opposing force to public welfare, and no system whatever will long prevail where this force is neglected. The recent tendency in the American rate situation, where the rate-making basis is being shifted from the sound principle of the ability and willingness to pay to the distance principle, is altogether deplorable, because the economic basis, which is being strenuously disregarded as repugnant to the concept of social justice, constitutes the only principle of developing the

national commerce and industry with the modern transportation facilities.

2. Benefit.

The cost basis, on which the distance principle largely, if not entirely, depends for its support, must be discarded, because it is impractical to base rates on cost with any approach to accuracy, and if it were, it would certainly not be to the best interest of the public cheap, bulky, and competitive traffic being excluded from free and unobstructed carriage. Cost not only bears no relationship to the willingness of traffic to pay, but also it is independent of the distance of haul in the majority of cases, as long as the law of diminishing cost operates.

Rates are equitable and reasonable when they allow the development of the largest amount of traffic, and at the same time they as a whole pay the working expenses and leave a reasonable margin for the interest on capital, broadly and in the long run, although cost enters into consideration to a very limited extent, and must be adjusted to revenue, instead of revenue being adjusted to cost.

In a country, particularly in America, with long distances separating leading industrial centers, varying characters of geographical division, diversity of natural resources, broad expanses of undeveloped and partially developed territory, and vast potentiality of future expansion, it is especially essential to establish railway rates that

are based on the willingness of traffic to pay, and the primary function of the railway operation to conquer distance and to create place utility must be allowed to work to the full extent.

It is the best policy, which is applicable to state and private railways alike, to allow them to make rates that obtain for them as much traffic as possible, with due regard to the potential volume of traffic, being not so high as to stop the traffic from going and developing. The cost principle must be observed very remotely and only for the purpose of determining the minimum limits of particular rates. It goes without saying that large railway business at low rates is more beneficial to the communities than small business at high rates, and this benefit is only possible when rates are made on the basis of the willingness of traffic to pay.

Under the economic system of rate-making, rates are apportioned so as to encourage the largest practicable exchange of products between the different sections of the country, by placing upon such traffic as are willing to pay higher rates, owing to its high value, freedom from market competition, easy accessibility to market, etc., some share of the burden that, in a relatively equal apportionment on the distance basis, would fall upon less willing traffic.

This system is perfectly defensible from the social point of view as well, but unfortunately, it proves a difficult task to convince the interested parties of the justifiability

thereof, when it is applied to practical cases. The follower of the distance principle bases equitable rates on cost, and when he fails in his contention on this basis, he maintains that rates should vary with the service rendered, or the service to the traffic, which is determined by the yardstick of distance, and that, therefore, just and reasonable rates should vary with the distance of haul. Is it equitable to charge $1.00 for one hundred miles and $1.50 for fifty miles, simultaneously, over the same route in the same direction for the traffic of the same volume and description? Or is it fair to charge $1.00 on a shipment and seventy-five cents on another shipment of the identical article of the same volume for exactly the same service on the same line? These questions are very aptly answered through the oyster and motor cases referred to in the preceding discussion. There is absolutely no injury to anyone; on the contrary, the carriers benefit, because they obtain an extra revenue, the shippers benefit, because they are supplied with the required services, and the communities benefit, because every party prospers in the business, and the exchange of commodities and persons is carried on freely, all through the establishment of such rates and fares as the traffic is able and willing to bear. What is illogical or unfair in the making of the rates which bring about social and economic benefits and no harm whatever to any party?

The above cases are very unusually simple. There were in question only special rates on single commodity and

and passengers between two defined points. The traders and passengers concerned were a small number and could be dealt with individually and directly. The reasoning, however, is applicable with equal force to any complicated situation. Acworth furnishes the following case in the Railway Economics:

"Before the grouping (of the British railways into four major systems in 1923) by the Great Eastern Railway, which went in an almost direct line, Yarmouth was 121 miles, Norwich was 114 miles, and Cromer was 138 miles, from London. But there was another route via the Midland, as it then was, from St. Pancras, which, passing Petersborough, 118 miles, and Lynn, 157 miles, turned east along the north coast of Norfolk and reached Cromer in 202 miles, Norwich in 209 miles, Yarmouth in 229 miles. And not only was this latter route a good deal longer to Cromer and very much longer to Norwich and Yarmouth, but all along its course from Lynn on the west to Cromer on the east it was cut by the direct Great Eastern line from London. The result was inevitable. Unless the roundabout route went out of the through business altogether, agreeing not to compete (possibly being given a quid pro quo by the Great Eastern elsewhere) its possible rate for London traffic was fixed for it. Their practical point was somewhere near Cromer, based on the Great Eastern London-Cromer distance, and they had to fall westward toward Lynn and southward toward Norwich and Yarmouth. In other words, no additional charge could be made for carrying the traffic the last

one hundred miles of its journey to Yarmouth. But this applied to London only. Intermediate places on the Midland Company's line, for instance, Bedford or Wellingboro', had not the Great Eastern route available. They had to send their traffic by the circuitous route. For such traffic the rates, we may assume, rose on a normal mileage basis, and therefore, from Bedford to Yarmouth, 179 miles, the rates were considerably higher than if the railway company had received the traffic in London and had had to carry it fifty additional miles before it reached Bedford.

"We may assume that if a trader at Bedford had happened to discover this, he would have been indignant, Certainly, on the face of it, he appeared to be treated badly. But was it so in reality? Were there any special circumstances entitling him to be charged less than the normal mileage rate? If not, he could not complain; he was only charged on actual distance. Was the Yarmouth traffic carried at his expense'? No. For we have seen that, even with rates far below the average, yet it is more profitable to the railway to carry traffic than to lose it altogether. Was the railway enabling the London trader to obtain an undue advantage over his competitor at Bedford or Wellingboro'? Again, no. The London trader had access to the short and direct route. There was no reason why he should pay any more than the rates natural to that route. Bedford's only route to Yarmouth was a circuitous one. This might be Bedford's misfortune, but was not the fault either of the London trader or of the railway

company. On the whole, there seems no reason to doubt that the railway company was entitled to carry the traffic past Bedford from London for considerably less than nothing."

Apart from the doubtful economic significance of the long-and-short haul principle, which has been enacted in the Federal and State laws of the United States and in certain continental executive regulations, railway rates, if they are so made as to move traffic freely, must be made either according to the ability of traffic to pay, as in the case of the rate at X in the oyster illustration, or the willingness of traffic to pay, as in the case of the rate from X on the oysters shipped from Y. Clearly, if between two points, one hundred miles apart in direct distance, there are two railways respectively 100 and 150 miles in length, the longer line cannot obtain a higher rate than the shorter. Or again, if there is a direct railway line and a parallel route by sea, the railway can only obtain such a rate as represents the average sea freight with a surcharge for the extra safety, speed, regularity, and convenience which the railway affords. Wherever competition prevails, charges affected thereby tend for equalization, with or without differentials, as the case may require, and such charges are determined in the natural process of economic operation, without the least regard to cost or distance.

If the long and short haul clause is applied with rigor, the intermediate stations will obtain an advantage to which they are not equitably entitled, where the competitive

or other traffic is of such magnitude and importance that the railway cannot do without it. On the other hand, where such traffic is not of such importance, the railway simply will give up the business and allow it to divert to the rival railway with the shorter line, or, it may be, to the competitor by river, canal, or coastal steamer, or by highway motor truck and bus. In such cases, the railway company suffers, for it loses a profit; the customers at its intermediate stations suffer, for there is no long-distance traffic left to contribute to the joint and constant expenses of the railway on which they are wholly dependent. No one gains by distance rates or long-and-short-haul rates, except the rival carriers.

Railway charges, however, based on the above economic principle, that is, on the ability and willingness of traffic to pay, very often introduce real difficulty. Economic argument, commercial instinct, seem to point one way. The sense of justice of the ordinary citizen seems to point the other. The success of legislatures and law courts depends upon how these conflicting ideas are reconciled.

The benefit of the economically constructed rates is obvious. They serve to widen the range of commerce in articles whose bulk or weight is large as compared with their value, and the sphere of traveling of the less well-to-do. They tend to develop industry and extend communication, to the best interest of the railways because they will build up a large business, and also of the public because they are

made to pay in proportion to the benefit received from service. They encourage the largest practicable exchange of products and persons between different sections of the country and with foreign communities.

3. Test of Reasonableness.

The problem as to the test of reasonableness for the railway rates as a whole, either singly, territorily, or nationally, is a matter of comparatively recent origin. As has been already fully discussed before, it had been of little concern both to the public and the carriers themselves, up to the passage of the Transportation Act of 1920, in which the so-called rule of rate-making was incorporated. It has since been an established principle that charges should be so made as to yield as a whole a certain level of revenue in regard to the value of the property used in rendering transportation services.

However, this principle is, as a matter of fact, applicable only in a very remote manner, for the total revenue comes from the individual rates which, where they are made so that traffic may be more freely moved and amply developed, are to be made primarily on the willingness of the traffic to pay, without the least deference to the cost of service or the distance of carriage. Theoretically, therefore, the cost of service must be adjusted to the entire revenue from economic rates, so that it may have a certain relationship to the value of the property used. In reality, however, the

extent to which cost is adjustable to revenue is limited, and the general level of rates may have to be adjusted now and then to meet the actual railway requirement. Although a railway has, evidently, no inherent right to control the profit of the public, yet undoubtedly, there is some margin where it can raise its general level of rates without much affecting the traffic and industrial situations, particularly in time of prosperity. Purely from the economic principle of rate-making, however, the cost consideration is only secondary, and can enter merely as expediency to meet extraordinary situations.

As regards individual rates, there could possibly be no good reason to doubt the equity and justice in basing them on the ability and willingness of traffic to pay, as the case may be, in spite of the recent tendency in the public regulation to enforce the long and short haul principle with more rigor, and to introduce the distance principle to the growing extent, without much regard to the economic forces, by diverse conflicting reasons, based sometimes on the cost of service, and sometimes on the amount of service rendered to traffic, and also by social reasons based on the advantage of the diffusion of industry and population.

However, if it is once acknowledged that the best interest of the public as well as of the railways is served only by the economically constructed rates, then the test of reasonableness for the individual rates must be the willingness or ability of the traffic to pay, with incidental reference

to the cost of service. In other words, if those rates only, which are determined between the maximum limit set by the ability of the traffic to pay and the minimum limit provided by the additional cost incurred in the handling and movement thereof, and which allow the free flow and healthy development of the traffic, are equitable and just, then the yardstick with which to measure the individual rates must necessarily be the willingness, or in some cases the ability, of the traffic to pay. If it is true, the distance principle, on which distance rates depend for advisability, will altogether be fallacious both socially and economically.

So long as the economic principle, that prices should be made according to what customers are able to pay, in limited cases where the business is little affected by competition, and principally what customers are willing to pay, or, translated into the railway language, what traffic is willing and able to pay under diverse forces, is applied to all cases, and so long as the railway does not make an excessive profit out of its operation as a whole, no claim of the exercise of monopoly powers, either by one carrier or by a group of carriers, can be set up and justified.

"The statement that low rates at competitive points impose heavier burdens upon local traffic is fallacious. The railroad could not get the through traffic at all unless it made low rates. Unless carried at an actual loss - impossible from an economic standpoint - it does the local traffic no harm. If it pay any profit - although insufficient to contribute to fixed charges - it reduces the amount necessary

to be raised from local shipments.

"Low rates at competitive points, by producing paying business not otherwise obtainable, in the end benefit the local traffic by enabling the railroad to reduce the rates thereon.

"A statute absolutely denying a railroad the right to charge less for the longer haul, while seeming just at first glance, would contravene those elementary principles. . . A railroad must take business from competitive points at competitive rates; and if it cannot charge intermediate traffic proportionally more, it must often go into bankruptcy. And if it must subsist upon the local traffic alone, the same result is likely to follow. Instead of the railroad losing money on long hauls and making it up on the short, whatever is received from through traffic above the additional expense of earning it is extra, and goes that far toward maintaining the railroad. Inequalities in charges in favor of the long haul manifestly constitute discrimination between localities; but they are not unjust unless the differences in charges fail to correspond to the differences in conditions." Noyes: American Railroad Rates.

The contention that the test of reasonableness should be based on the cost of service or the distance of haul is evidently supported by those, whose idea is that equality is equity, or that social justice is a different thing from economic justice.

That equitable and just rates are possible only on the basis either of the ability or willingness of traffic to bear is quite simple and clear, but unfortunately, the prevailing sense of justice points to the other way. Perhaps, one main reason why this plain principle is not readily conceded is to be found in the fact that it is regarded as something exceptional - as a claim made in reference to railway business only, on the ground of a supposed generic difference between railways and other undertakings. The truth would rather seem to be that railways are only typical of the great modern business organizations. They came first, and their methods of charging, almost from the outset, differed profoundly from those of the contemporary small trader, to whom cost plus profit represented both an ascertainable and an obtainable price. In industrial undertakings nowadays, 'cost' is a very indeterminate figure; 'profit' varies still more widely, both as between different parts of the same business and in reference to the business as a whole. The public opinion, however, still assumes that the old principles govern. To quote from Acworth, "Most people probably have had personal experience of traveling from A to B with an ordinary ticket costing, say, £ 1, and finding that a fellow-passenger in the same carriage has obtained a Friday to Monday ticket (a week-end arrangement extensively made by the British railways) for only 6 s. 8 d. extra. It seems somewhat unreasonable, and many people have, therefore, felt that they were being unfairly treated. If the railway could afford to carry a passenger to B and back again for

26 s. 8 d., 20 s. must, they have instinctively argued, give an extortionate profit on a single journey. And if the cost of carrying a single passenger were a determinate figure, and if to that cost it was always possible to add a fixed percentage representing an average and reasonable profit, the criticism would be just. But, as both hypotheses are unsound, the criticism fails."

The willingness of traffic, however, varies with each description of traffic and with each condition, and consequently, any rate structure that is constructed on this basis must necessarily have on the face of it an appearance of irregularity, and any attempt to analyze it and arrange the individual rates therein in a scientific and orderly manner will inevitably fail. It passes the wit of the most experienced official of the executive government, of the most learned judge of a railway tribunal, to decide abstractly and absolutely whether a given rate, say, one per cent per ton-mile, is per se reasonable, or whether 15/16 or 1-1/16 cent is more or less reasonable. Fixing a rate is, as is shown everywhere in railway history, an art, not a science, and it is an art which must be exercised "in a sort of twilight . . . in an atmosphere of probabilities and of doubt, where nothing is very clear, where there are some chances for many events, where there is much to be said for several courses, where nevertheless one course must be determinedly chosen and fixedly adhered to".

As has been repeatedly emphasized, the total railway cost is in a great degree independent of the volume of traffic carried, and it is almost wholly independent of the particular categories and items of traffic transported. Therefore, it is impossible and impracticable to test the reasonableness of rates on the basis of what the traffic costs to carry. It would, even if it were, not be expedient or in the public interest. It would mean to shut out from carriage much traffic that in the interest of the community ought to be carried; it would mean, further, a great restriction of potential traffic, and so a higher average rate on the traffic actually carried. Into the fixation of rates the 'cost of service' enters only to the extent that any rate cannot, broadly and in the long run, be put lower than the point at which the amount received for carriage covers the extra cost approximately estimated for the speical service involved.

In the executive and judicial opinion in this country, the test of reasonableness for individual rates had been, until lately, grounded on the whole principally, if not solely, upon the value of service, which may be interpreted from the circumstances as the willingness of traffic. Judge Cooley, the original Chairman of the Interstate Commerce Commission, was forced at the outset of the work in 1887 to consider the problem whether rates, avowedly based on what the traffic would bear, or, in other words, not on the cost but on the value of service, could be regarded as equitable. The very illuminating conclusion was expressed in the Commission's First Annual Report, as

follows:

"It was very early in the history of railroads perceived that, if these agencies of commerce were to accomplish the greatest practical good, the charges for the transportation of different articles of freight could not be apportioned among such articles by reference to the cost of transporting them severally; for this, if the apportionment were possible, would restrict within very narrow limits the commerce in articles whose bulk or weight was large as compared with their value.

"On the system of apportioning the charges strictly to the cost, some kinds of commerce, which have been very useful to the country and have tended greatly to bring its different sections into more intimate business and social relations, could never have grown to any considerable magnitude, and in some cases could not have existed at all, for the simple reason that the value at the place of delivery would not equal the purchase price with the transportation added.

"The traffic would thus be precluded, because the charge for carriage would be greater than it would bear. On the other hand, the rates for the carriage of articles, which within small bulk or weight concentrate great value, would on that system of making them be absurdly low when compared to the value of the articles, and then perhaps not less so when the comparison was with the value of the service in transporting them. It was, therefore, seen not to be unjust to apportion the whole cost of service among all the articles transported upon a basis

that should consider the relative value of the service more than the relative cost of carriage. Such method of apportionment would be best for the country, because it would enlarge commerce and extend communication; it would be best for the railroads, because it would build up a large business; and it would not be unjust to property owners, who would thus be made to pay in some proportion to benefit received. Such a system of rate-making would in principle approximate taxation; the value of the article carried being the most important element in determining what shall be paid upon it. . . To take each class of freight by itself and measure the reasonableness of charges by reference to the cost of transporting that particular class, though it might seem abstractly just, would neither be practicable for the carriers nor consistent with the public interest. The public interest is best served when the rates are so apportioned as to encourage the largest practicable exchange of products between different sections of our country and with foreign countries; and this can only be done by making value an important consideration . . . With this method of arranging tariffs, little fault is found, and perhaps none at all by persons who consider the subject from the standpoint of public interest."

The above admirable economic principle is perfectly applicable to the fixation of passenger fares as well, though the problem thereof has not come into the limelight in America, for, as said before, service has been more in consideration than charges, and passenger traffic negligible on the whole

as compared to freight traffic. The idea of Judge Cooley pervaded throughout the decisions on the numerous cases brought before the Interstate Commerce Commission and the courts in the early period, in which it was held that the best possible rates did not rest on the tables of mileage rates, that they did not reflect any comparison of distance, and that the only test of reasonableness applicable to individual rates must be based on the willingness of traffic to pay. 206 U. S. 26; 20 I. C. C. 307; 206 U. S. 1; 22 I. C. C. 604; 25 I. C. C. 442; 26 I. C. C. 20; 29 I. C. C. 428; 36 I. C. C. 248; 51 I. C. C. 635.

However, the Interstate Commerce Commission deviated from this principle toward the cost or distance principle in a few cases, evidently by way of effecting compromise for vehement complaints of discriminations. It admitted that the value of articles was "one of the determining factors", but it did not strictly adhere to it, because it was "though important, not the controlling element", and therefore, it must not be considered "as the sole test of the reasonableness . . ." 16 I. C. C. 587; 34 I. C. C. 383; 40 I. C. C. 7; 47 I. C. C. 91. The decisions on these cases were not based purely on the economic law, but largely on political considerations.

4. Disadvantage.

In commercial affairs generally, and not in railway service only, prices are based not on cost to the producer but on willingness to pay on the part of the consumer, subject to the special cost of the article sold or service rendered, below which the lowest price cannot go in the long run, and also to

the total cost, general as well as special, which all the prices as a whole must cover in the long run. In other words, railway charges are, under the economic principle, determined on the ability or willingness of traffic to pay, and a railway undertaking happens to prove successful when, under such rate system, the lowest rate on a service in the long run equals its prime cost plus so much of the standing cost as it can and will bear, and the total revenue from the entire service equals the total cost of the undertaking plus the interest at the normal current rate on the capital engaged. Let it charge for its services what the traffic is able and willing to pay, and the commerce and industry will prosper. If the revenue from such charges happens to be insufficient to cover the entire expenditures including the necessary interest, no one is to blame, the economic situation of the particular time being alone responsible therefor. If the situation is so favorable that the total revenue exceeds the normal level, so much the better, and the excess may be either retained as a profit by the carrier, or used to lower its general rate level.

It may be said, however, that a railway is not a store or a factory, but it is by its nature a public or quasi-public undertaking. It is not only a monopoly, at least to some extent, but also the greatest modern business organization. Therefore, the methods which are justifiable in the case of a manufacturer or a store-keeper are not necessarily justifiable in the case of a railway. This objection may be a fair one. The public importance and the monopolistic nature of

railway charges have been recognized in every country and have led many countries to these charges being made directly by public functionaries, and in all other countries to their being subjected to a considerable measure of public control.

The justifiability of the public regulation of railway charges, however, is not a matter of principle, and in what manner, and to what extent, the State may manage or control the railway and railway rate-making are purely a matter of policy. Unlike a principle, a policy defies any scientific analysis, and it is only explainable on political grounds, which do not permit of abstract thinking.

Apparently, a question of policy is confounded with a question of principle, and a futile attempt seems to have been continuously made to justify the political interference with the rate situations of the country on the basis of some theoretical reasons or other. The economic rate-making basis has often been attacked and condemned by the Interstate Commerce Commission and the Supreme Court as well as by the general public, but their contention was founded on an unsupportable idea that the railway charges were made by the carriers solely by reference to the ability of traffic to pay. They overlooked, intentionally or unintentionally, the self-evident fact that the railway charges, which were mostly of competitive nature, were, in the majority of cases, made on the willingness of traffic to pay.

In 1910, certain western railways contended, in justification of some increases in their freight rates which

they were seeking to secure, that the increase in the general level of commodity prices above the low point of 1896 had resulted in an increase in their cost of service which they could only meet through an increase in their rates, and also that the traffic of the country would well afford to pay such increased rates. Thereupon, the shipping interests of the West said, in opposition to the proposition, that rates should in principle be made in relation to the value of the service to the shipper. In effect, the shippers' contention was that railway charges must be made at shippers' pleasure, and that a railway had no right to participate in the result of a general business prosperity. The Commission disapproved of this argument, but in that case, Commissioner Lane dissented, his very unsympathetic opinion being as follows:

"Rates being made upon this theory, the function of the traffic manager is that of a statesman; he determines the zones of production and consumption, the profits of the producer and the cost to the consumer; he makes his rates, if he so pleases, to offset and nullify the effect of import duties and determines the extent and character of our foreign markets.

"To make rates for transportation based solely upon the ability of the shipper to pay those rates is to make the charges for transportation depend upon the cost of production rather than the cost of carriage - to measure a public service by the economies practiced by a private shipper. This necessarily gives to the carrier the right to measure the amount of profit which the shipper may make, and fix its rates

upon the traffic manager's judgment as to what the traffic can pay. This theory entitles the railroad to enter the books of every enterprise which it serves, and to raise or lower rates without respect to its own earnings, but solely with respect to the earnings of those whose traffic it carries. This is not the regulation of the railroads by the nation, but the regulation of the industries and commerce of the country by the railroads." 20 I. C. C. 307.

In another case, involving the advance of the rates on lumber from Georgia points to Ohio River destinations, the carriers argues that they were entitled to share in the phenomenal prosperity of the business, by charging on the traffic according to what it would consent to pay. The Interstate Commerce Commission refused the advance, on the ground that the increased prosperity was no reason for raising the railway rates, and that it was an erroneous assumption "to make rates as high as the traffic would bear". 10 I. C. C. 548.

Again, on other occasions of a similar nature, the Commission contended that the amount of profit in the business of shippers and manufacturers did not constitute the basis for making reasonable rates; that the right of carriers to participate in the prosperity of shippers by raising their rates would simply be a license to the carriers to appropriate that prosperity, or, in other words, to transfer the shippers' legitimate profit in their business from the shippers to the carriers; and that the right to charge a certain sum did not depend at all upon the fact of whether the customers were

making or losing by their business. 10 I. C. C. ; 63 I. C. C. 107. Apart from the question of the reasonable maximum limitation of a carrier's revenue as a whole, the Commission held in effect that the railways might not base their rates, in cases where they desired to raise them, on the ability and willingness of traffic to pay.

All the above-mentioned contentions of the Interstate Commerce Commission seem to be erroneous, because they do not differentiate between policy and principle; because they rest upon the ascertainability and constancy of the cost of particular services; and lastly, because they assume that rates are made only on the ability basis.

The value of service principle, the term of which is generally used in a very broad and ambiguous sense, and often employed to mean the difference in the prices of a commodity between its points of origin and destination (Railway Rates and Traffic, by Colson; Transportation, by Travis), but which must be interpreted as a principle whereby a railway rate is made according to the value of the service rendered as measured by the willingness of the traffic to pay, is very often attacked as a principle of extortion, as is evidenced in the above-mentioned opinion of Commissioner Lane. But if once the justice and necessity of a system of differential charging on railways is admitted, there does not appear to be anything unreasonable in charging rates on traffic according to its willingness to pay. The underlying principle is

not one of extortion, but of remission and alleviation. Far from being in any way peculiar to railways, it is a principle which not only pervades all businesses and all commercial and professional life, but is applied by the people at large, both locally and in their national capacity, as a true basis for the system of taxation, broadly and equitably between the different classes of the community.

The same idea, that the cost basis is a fair one, and that the value basis is an unjust one, is traceable, though to a limited extent, in the court opinions. According thereto, railway rates should not be such as the railway could make its shippers pay, and they were not reasonable and just simply because traffic could afford to pay. 169 U. S. 547; 42 L. ed. 849; 18 Sup. Ct. Rep. 418; 164 U. S. 596; 41 L. ed. 566; 17 Sup. Ct. Rep. 198. Although these cases primarily involved the right of carriers to raise their particular rates to meet the requirements of their total costs, and the decisions rendered were not necessarily to be interpreted as denouncing the principle of charging according to what the traffic is willing to bear, yet the logical conclusion therefrom points to the ultimate condemnation of the principle as well as the ability basis.

All the fallacy in the arguments against the principle of charging what the traffic is willing to bear come about as a result of the failure of clearly separating policy from principle, or individual rates from general rate levels, and the misinterpretation of the phrase. The term has un-

doubtedly acquired an ill repute. As a matter of fact, however, it certainly represents a principle not of extortion but of moderation, because to charge what the traffic is willing to bear is not to charge what the traffic is not only unable but also unwilling to pay, as the case may be. Yet the phrase is commonly understood quite differently. It has been asserted that on this principle railways claim to estimate themselves production cost A and selling price B, and to appropriate as railway rates the entire difference - in other words, to impose on the traffic as much as it can bear (Railway Problems, by Jeans).

Whatever may be said abstractly, the truth is that no railway administration has ever acted, or, more properly, has ever been able to act, alone on the basis of the ability of the traffic to pay, but on the whole the majority of rates have been determined according to the willingness of the traffic to pay.

The real meaning of what the traffic is willing to pay is that, within the limitations - the superior limit of what any particular traffic can afford to pay, and the inferior limit of what the railway can afford to carry it for - railway charges for the different categories of traffic are fixed, not according to an estimated cost of service, but roughly on the principle of equality of sacrifice by the payer. It is the only system which - the point must be reiterated - is, always has been, and, as long as the best interest of the industry and commerce of a country is to be served on purely

economic bases, always must be adopted on all railways, whether they be State enterprises or private undertakings.

What appears on the surface of it to be the disadvantage of the principle of charging what the traffic is able and willing to bear - a theoretical excuse on the part of the carrier to make extortionate rates upon the defenseless public - comes of the failure properly to construe the real character and function of railway charges.

V. COMPETITION.

Railway charges, if they are not to be economic, must be determined principally according to what the traffic is willing to pay, and the willingness to pay is determined largely by the competitive forces in operation upon the particular traffic.

A. Equalization of Charges.

Although the recent tendency in the American regulation of railway charges has been toward the disregard of competitive forces, they were long recognized as a dominant factor in rate-making, and often encouraged as an automatic regulator of situations in the laissez-faire philosophy. Even positive measures were taken to prohibit the carriers from resorting to concerted action in alleviating the competitive conditions to which they were subjected.

Apart from the problem as regards the advisability of protecting the carriers from the destructive effects of excessive competition, a railway must secure as much traffic as possible, so long as the undertaking is carried on under the economic law of increasing return. So much of the total railway expenditures is more or less fixed in character, and so little thereof can be attributed to the cost of carrying any particular traffic, that the railway will naturally prefer to carry traffic at a very small rate rather than not carry it at all. As has been discussed, it will still be profitable to sell its services at less than the present average cost,

if the entire cost is thereby reduced. To secure a low average cost of service, in order to induce more traffic to move or to increase the productivity of the capital engaged, larger amount of transportation must be sold at whatever rate the traffic is willing to pay, subject to the maximum and minimum limits set respectively by the additional cost and the ability to pay. If two or more prices can be charged for an identical service, it will be worth while to sell some of the transportation below the average cost of production, provided the extra sales thereby rendered possible serve to reduce the average cost sufficiently to make the surplus, arising from the excess of the high prices over the new cost of production, exceed the total deficiency arising from the low prices falling short of the new average cost of production.

The above principle has already been fully explained on the basis of figures, but a simple instance will illustrate the situation more clearly, as follows:

One train service in one direction necessarily involves another service in opposite direction, no matter whether there is traffic available therefor. Where the train moves largely empty, which is generally the case with the railway operation, particularly in America, with its industries and population concentrated at far-between spots and a large quantity of low-grade, bulky, long-distance traffic to travel, it is better to secure traffic at any rate, that more than covers the trifling difference in cost between running it full

and running it empty, than no rate at all.

It must be emphasized over again that in commercial affairs generally, and not in railway service only, prices are based, not on cost to the producer but on value to the consumer, as measured by his willingness to pay; subject to the limitation that the lowest price cannot in the long run go below the additional cost of the article sold or service rendered, and that all the prices in the long run must cover all the costs, joint as well as additional, of all the articles or services.

The result of charging less on traffic less willing to pay, due to its small demand for service, will be the additional revenue to the railway and the possible reduction in the rates for the regular traffic. To be more concrete, coal was carried into Holland from Westphalia by a Dutch railway in 200-ton lots at the rate of about .65 cent per ton-mile. To secure return freight, Spanish ore was carried in train-loads from Rotterdam to the iron works in Westphalia, a distance of about 150 miles, at a rate as low as 0.2 cent per ton per mile. Pratt: Railways and Their Rates, Page 275.

On the whole, regular passenger traffic is fairly well balanced in volume on the up and down train movements of any railway, but there are very few railways, especially in this country, which have freight traffic balanced in all directions. On the American railways, the preponderance of empty movements is westbound and southbound. The Great Northern

Railroad, during the ten months from January to October, 1923, would have carried 1,427 net additional tons per day from the eastern to the western termini, without incurring any additional train miles, that is, without requiring any extra cars, locomotives or train crews. On the Great Northern, the Chicago, Milwaukee & St. Paul, the Northern Pacific, and the Union Pacific systems, the total number of cars moved westbound during the period from January to November of 1923 was 304,514, out of which 186,038, or 61.1 per cent, were hauled empty. On the Atchison, Topeka and Santa Fe, an investigation shows that from July, 1921, to October, 1923, the number of the westbound cars that passed through Belon, New Mexico, was 104,750 loaded and 85,200 empty. Across the Mississippi River one loaded car has been moving westbound as against three loaded cars eastbound. In the South, as in the West, the outward traffic consists largely of agriculture, ranch and forest products, and the preponderance of loaded movements is consequently northbound, the flow of empty cars being southward. Taken as a whole, the average number of passengers carried per car varies from ten to eleven as against the average car capacity of sixty-four, and the average volume of freight carried per load is twenty-seven tons as against the average car capacity of forty-seven tons. The ratio of the empty freight-train car mileage to the loaded mileage is as follows:

YEAR	LOADED	EMPTY	RATIO
1915	12,809,063,467	6,513,299,809	.50
1916	15,714,456,158	6,698,592,309	.43
1917	15,774,877,027	6,702,738,644	.42
1918	14,884,642,008	7,101,739,017	.48
1919	14,176,430,767	6,476,349,889	.46
1920	15,231,697,980	7,205,048,258	.47
1921	12,364,451,705	7,256,009,922	.59
1922	13,834,368,441	6,741,999,051	.49

Under these conditions, there is absolutely no good economic reason why rates based on willingness to pay should not be made, so that the efficient use may be made of those unused capacities, through diverting traffic from other rival carriers or encouraging the rapid development of the potential commerce along the lines. The cost of using such capacities will be very little, and any amount of revenue therefrom will prove a contribution toward the standing expenditures, after the nominal cost is defrayed. It is simply non-understandable to attempt to introduce distance rates in the face of this situation.

If traffic is to be secured as much as possible, rates must be made so that it may be attracted, induced, and developed. Some portion thereof may move and expand at such rates as high as it is able to pay, but most of it is of such nature that it will be diverted to other carriers or prevented from development unless it is given the rates that it is willing to pay. The willingness of traffic to pay is determined by

the competitive forces which are operating upon it either through transportation or market.

The automatic and natural operation is that wherever there are more than two different routes between two points open to traffic, it flows through the route that offers the least resistance. Therefore, it moves only over the line which is the shortest in distance, the lowest in cost, or the most favorable in other respects, and the other routes serving between the same two points can never obtain any traffic between them, if their rates are not equalized, with the rates on the parallel route, and are made higher merely because the cost is larger or the distance greater than the latter. The same is perfectly true with the rates on such traffic as is carried from different points in competition for the same market. Some places are more distant, or cost more in production, and if a commodity is given a rate which is higher, or the same, solely because the distance to the market is greater, or the same it will be shut out from it, and the identical commodity produced at the nearest place or at the lowest cost will monopolize the market. If, therefore, the market is amply supplied with the goods from all the sources, the rates must be equalized.

The charges thus equalized, through transportation and market competitive forces, with the charges determined over the most favored traffic according to its ability to pay, are the charges that the competitive traffic is willing to pay when it moves over the less advantageous routes or from the

less favorable points of production.

"To compete is to strive for something which another is actively seeking and wishes to gain". 226 U. S. 61. Competition, either transportation, market, or industrial, has been, is, and will be a dominant and controlling factor in the making of railway charges, as long as such competition prevails, and competition, as such, consists of those forces effective through the striving for traffic by alternative routes or points of production, which operate upon rates rather than upon services.

There are only two means available for the solution of the problem in connection with competition; either the railway withdraws from the business and continues its local service, if the disadvantage, transportation, or market is so great as it will be unprofitable their rates for the competitive traffic; or the railway depresses their rates for such traffic down to the level of the rates for the most favored traffic, so that similar goods may be laid down on the common market to be sold as the same price. Wherever it is found to be profitable to participate in competitive traffic, it is only too natural for a railway to resort to the latter measure, but it necessarily involves the situation in which the shorter haul is charged for more than, or the same as, the long haul. However, the departure from the long and short haul principle has an appearance of injustice, and is often made impossible by public opinion, even if not by positive law. 15 I. C. C. 376; 21 I. C. C. 329

Whatever may be said for cost and distance, the fact cannot be denied that if a railway is to participate in competitive traffic, to the benefit not only of itself but also of the public, it must be allowed to quote such rates as it is willing to pay, and that the willingness of the traffic to pay is determined on the basis of the rates that are paid by the traffic situated most favorably either in respect to the transportation or market conditions. To secure and develop such competitive traffic, rates must be equalized, either the same or higher in differential relationships to the advantages as to service. The determination of railway charges is no exception in the operation of the economic law that, where there are more than two different prices for similar goods on a competitive market, they tend to stabilize on the same level. Railway charges are controlled by competitive forces exactly in the same manner as the other commercial prices.

In Great Britain, the railways do have mileage scales for goods rates, but owing to the ubiquity of the railway, water, highway, and market competition, which influences the rates for intermediate points, they are not only far from being symmetrical mileage tariffs, but touch only local retail business of a small quantity, the wholesale traffic, the large consignments, the constant exchange between great centers, the export, import and transit trade, all being done at what are called special or exceptional rates. Indeed, more than three-quarters of the entire traffic are being carried at such

been operating very keenly on the rate structures of the country. They have affected the rates, as far as Denver, Pueblo, Salt Lake Valley, and west of the Missouri River, for the manufactured articles in the Official Classification Territory. They have influenced the rates in the West and South at the trade centers for the distribution of merchandise, and at the concentration points for the neighborhood agricultural and rach products. To secure the equalization of opportunity for the carriers and the business men, a rate structure has developed upon transit privileges and the "in and out" system, under which jobbers' warehousing and credit services were taken into account, the sum of the car-load rates to the local jobbing centers plus the less-than-car-load rates outbound was substantially balanced against the long-haul less-than-car-load rates.

The willingness of traffic set up by competitive forces, and the rates were made favorable for St. Paul as against Kansas City, Omaha and Duluth, 14 I. C. C. 229; 33 I. C. C. 577; 46 I. C. C. 585; for Seattle as against Spokane, 15 I. C. C. 376; 19 I. C. C. 162; 21 I. C. C. 400; 23 I. C. C. 454; 61 I. C. C. 226; for Dallas and Houston as against Shreveport, 23 I. C. C. 31; 48 I. C. C. 312; for West Virginia Coal Fields as against Pennsylvania, 22 I. C. C. 640; 46 I. C. C. 159; for Chicago as against Toledo and Indianapolis, 43 I. C. C. 446; 43 I. C. C. 458; 46 I. C. C. 547; and Boston as against New York and Philadelphia.

Vehement outcries were constantly raised by the people located at those economically unfortunate places, and a series of "adjustments" was effected accordingly, but from the theoretical point of view, the rates were perfectly justifiable, if they were made exactly on the basis of what the traffic was willing to pay in consideration of the competitive forces which were at work on those rates. Discrimination of economic character, the complaints whereof are, therefore, sustainable, takes place only in cases where under competitive conditions, rates are not made in conformity to the willingness of the traffic to pay. Stated otherwise, the rates which are more or less than the amounts automatically determined by the willingness of traffic to pay are unreasonable and unjust. The only test in this relation, therefore, must consist in the examination of particular rates as to:

(1) Whether they are equalized, notwithstanding the competitive conditions are not substantially similar;

(2) Whether they are not equalized, notwithstanding the competitive conditions are substantially similar;

(3) And whether the differences in them do not represent the differences in the competitive conditions. Any attempt to disregard competitive forces and substitute the cost, distance, or ability basis for the willignness principle is a desperate attempt to fight against the economic law and deprive places and traffic of their natural advantage.

B. Railway Competition.

The instinctive desire of a carrier is to secure traffic as much as it can, and it is, therefore, very likely that rates are often cut down unnecessarily below the level required by the necessity of meeting its rival line competition, or below the minimum limit automatically fixed by the additional cost. Although such a situation will not continue very long, and those rates will economically adjust themselves sooner or later to the particular conditions, the subnormal depression of rates will result in the reduction of the total revenue, and the consequent necessity of raising the intermediate rates which are already as high as the traffic is able to pay.

Economic forces will rectify any irregularity that may be created by excessive and unnecessary competition, if pressure from outside is not brought to bear upon the function of the intelligent railway manager. Undoubtedly, it is advisable to prevent or correct through administrative measures such abnormality before it takes place, or whenever it actually crops out, but the trouble is that it is impossible to fix definitely what excessive and unnecessary competition is. It is a matter to be judged on the merit of each individual case. As stated before, in Great Britain a circuitous route longer by less than thirty per cent and more than fifty per cent of the distance of its direct route is prohibited as a rule to equalize its rate on fares, on the ground that it would be unnecessary and unreasonable. (Sec. 52, Railways

Act of 1921) and likewise in America the Interstate Commerce Commission has already made it a general practice to allow only a circuitous route longer by fifteen per cent up to fifty per cent or thirty per cent to enter into competition with its direct route through the equalization of charges. These rules, however, are arbitrary and not at all based on any theoretical basis, from the economic point of view, except for the purpose of providing a very general standard.

So long as a railway operates under the law of increasing return, where it is more profitable to secure as much traffic as possible, it is only natural and reasonable for the carrier to equalize its competitive rates with the rates on the lines serving the common terminals, or make differentials for the standard lines. The desire to utilize its unused capacity by means of the equalization of its rates is in much the same way and for much the same reason that it seeks and builds up business by low rates on low-grade traffic. Traffic can be secured only through meeting at competitive points the rates quoted by the most favorably situated of the rival lines. It is not willing to pay more than the rates which are made by the most favorable line according towhat it is able to pay. If the less favorable lines make rates on competitive traffic solely according to the cost of service or the distance of haul over their lines, it will be diverted to their rival lines.

Charging what the competitive traffic is willing to

pay is possible in most cases only when the long and short haul principle is violated, but the violations per se is by no means unjust. The discrimination against non-competitive points are simply economic, not at all unreasonable; only due consideration is given to the natural advantage at competitive points. The theory with respect to the equalization of competitive rates in departure from the distance principle is exactly the same as the theory on which a railway charges very much more for a higher class of traffic than for a lower class of traffic for hauling the same distance. Railway business is primarily a business of differentiation, and if the latter theory is once accepted, there cannot be any reason why the willingness theory should be denounced in favor of the cost, distance or ability principle.

Wherever two or more railways are open for the movement of similar traffic between the same points, or for different markets from the common points of production, the rates tend to be equalized, with or without differentials under particular circumstances, over all the routes, more and less favorable in respect to distance, cost, etc. The German railways charged on Russian grain from the frontier districts to Konigsburg for export at 2.5 pf. per ton per kilometre as against their local rate of 4 pf. Without equalization, this traffic would have diverted to the Russian railway lines via Riga, Reval, or Liban.

In America, the number of the railways that have

abandoned their services through the failure to meet railway competition, either due to the limitation provided by the Federal or State agencies or the unprofitableness of the competitive business, has not been small. During the period from 1920 to May 1st of 1925, out of the total number of abandoned railway lines (120 covering 2,438.95 miles), 11.7 per cent (14) covering 29.3 per cent (713.34) miles of the mileage were given up on this account.

Particularly in the South, there are a number of short lines situated at right angles to the main flow of traffic, and almost entirely dependent upon their connections for participation in long-haul traffic. All of these short lines are weak, with precarious financial conditions, and their traffic is very light in density. To secure traffic is of prime importance, and the Interstate Commerce Commission has hitherto permitted them to meet the rates of their competitors at the junctions, withour regard to the intermediate rates. They are financially weak and those rates cannot be blanked with the short-haul, non-competitive rates according to the long and short haul principle, much less graded back on conformity with the distance principle. If they were compelled to observe the cost or distance principle, the necessary result would be a reduction in their total revenue so great as to make it highly doubtful whether they could earn operating expenses. If they are to live, they must equalize the competitive rates according to the willingness of the traffic to pay, and keep up their local rates as high as the traffic is able to pay. 38 I. C. C. 411;

39 I. C. C. 378; 46 I. C. C. 712; 49 I. C. C. 271.

Kansas City, Leavenworth, St. Joseph, Omaha, Sioux City, and other Missouri River crossings have been equalized in respect to their rates from eastern points, 6 I. C. C. 458. The rates between the Middle West and the Atlantic Coast points have been equalized on the basis of the standard route between Chicago and New York, between those points numerous lines lying from Montreal down to Norfolk being in active competition. With various lines running parallel through a zone of about 150 miles in width, the rates between Chicago and Omaha have been equalized to enable all the lines to participate in the competitive traffic. Between Chicago and St. Louis, lines follow closely the Mississippi River on the one hand, and the eastern boundary of the State of Illinois on the other, the result having been the rate equalization. Likewise, between St. Louis and Omaha, competitive routes serve as divergent points as Kansas City and Freeport, Illinois. Between Chicago and Seattle, there are widely separated routes open, as the Canadian Pacific Railway and its subsidiary lines running through the southern portion of Canada, and roads lying as far south as Pueblo, Colorado, from which tonnage passes through Salt Lake City northwestward or westward and northward to destination. For traffic from Denver to San Francisco, routes are open which carry it through Ogden, Utah, or points in southern Arizona. The Pennsylvania Railroad is in a competitive position with the Sante Fe, the Union Pacific, and the Northern Pacific Railroads for the oriential traffic originating at Chicago.

Pittsburgh, and Cleveland. The routes leading from St. Louis to the eastern Atlantic ports must compete with the routes running to the Gulf ports for European traffic. The routes from the Upper Western Mississippi Valley to the northern Atlantic ports are in competition with the routes to the Gulf ports for grain traffic destined for European countries, and as soon as the intrastate corn rates were reduced in Texas, and interstate flour rates from Minneapolis to New York were reduced, and the corn rates from Kansas and Nebraska to points in the South were lowered, in order to keep the equilibrium in the eastbound and southbound rates.

An indefinitely long list of cases, where railways can participate in competitive traffic only through the equalization of their rates, could be given. After all, however, if a railway is to secure traffic, offensively or defensively, in rivalry with its competing lines, the rates concerned must be equalized, according to the principle of charging what the traffic is willing to pay, totally without deference to the cost, or distance, or any other principle. Any real evil in the excessive competition, that is very likely to occur under the hands-off policy, can be removed automatically in the natural course of the operation of the economic forces, and if, for some reasons, competition is to be stopped altogether from influencing the making of rates, a policy may be adopted to counteract the economic forces and require the distance principle to be introduced, or to compel the extensive consolidation of rival railways.

C. Water Competition.

Competition between railway carriers may be regulated within a reasonable extent through mutual cooperation in the forms of agreement, pooling, etc., but competition between rail and water carriers has been exerting its full effect upon the railway rates, for cooperation is impossible between those two types of transportation agencies, more favorable protection is usually granted to water carriers especially in countries desiring to develop their water facilities, and coastwise and ocean rates are by nature mostly beyond the control of public regulation, owing to the services being in most cases irregular and subject to severe international competition, or at least susceptible to international conditions.

The competitive force operates on railway rates in exactly the same manner as in the case of rail rivalry. Unless railway charges are equalized with water rates, usually with differentials over the latter, determined on the basis of speed, risk, cost, etc., most of the rail traffic will be diverted to water lines.

Hungarian grain destined for England is movable over two alternate routes; the one by rail to Hamburg, and the other by rail to Fiume whence by steamer to destination via Gibraltar. In order to secure the traffic over their lines in competition with the water carriers, the German railways had to makea rate of 353 marks from the frontier to Hamburg per wagon-load of ten tons as against the local rate of 468 marks.

In Great Britain, traffic originating at sea ports for London, such as meat from Liverpool; bacon, meat and wool from

Southampton; fruint and vegetables from Folkestone; bacon and dairy products from Harwich; would be almost totally diverted to the coastwise lines, unless the railway rates were made according to what the traffic is willing to pay.

In America, the rivers and canals have long ceased to be a controlling factor in the making of railway charges, for the transportation service thereon has remained almost dead, partly due to the pressure brought by the rival rail carriers to bear upon them, and partly due to the incompetency as a modern means of transportation. Recently, however, the legislative tendency has been decidedly toward the encouragement of water transportation facilities, as evidenced by the enactment of the Merchant Marine Act of 1920, and a large sum has been expended yearly in the improvement of ports, waterways, etc. Up to the close of 1915, and private and State canals had extended over 1,547.17 miles, and the Government canals 281.39 miles, the total mileage, including the other canalized rivers, being 4,385.06 miles. In spite of the hundreds of millions of dollars having been spent and numerous streams canalized, commerce upon these waterways shows no signs of revival, and probably there is not much prospect of further development to stand upon parity with the railways.

Of the coastwise lines, the Panama Route is the most influential. The boats now plying through the Canal are in a position to handle practically everything that moves westbound. The first inter-coastal steamship service by way of Cape Horn or the Straits of Magellan did not much affect the transconti-

nental rail rates. Upon the building of a railway across the Isthmus of Panama in 1855, and later of a railway across the Isthums of Tehuantepec in 1907, which opened break-bulk routes, the distance was shortened from 15,000 to 5,000 miles from New York to San Francisco, and the charges became greatly cheaper than the rail rates. Equalization began as the competition between the rail and water carriers grew keener. To aggravate the situation, Panama was opened in 1914 for the through operation of steamship service between the Atlantic and Pacific coasts. At that time it was estimated that, out of the total yearly westbound freight traffic of 3,000,000 tons, 700,000 tons might move through the Canal. The bbility of traffic, particularly westbound, was in most cases determined by the rates charged by the water lines, and the willingness of the traffic over the transcontinental lines was reduced considerably. The rates fromall the territories east of the Missouri River had to be equalized. Soon after the opening of the Panama Canal, the War broke out, and the steamers on the coastwise route left for a more lucrative ocean service, the result thereof being the return of the water traffic to the railway lines. By 1917, practically all the carriers had disappeared from the Panama service. The departures, which had been allowed from the long and short haul principle in connection with the equalization of the transcontinental rail rates, were accordingly withdrawn. Toward the close of 1919, however, the Canal service began to revive, with the growing number of steamers returning from the

Atlantic service, until twelve to fourteen different companies are now in regular operation. During 1920 a large proportion of the Atlantic-Pacific traffic was carried by way of the Canal route, 2,401,210 tons)westbound 1,159,306 and eastbound 1,241.904) moving through it from May to October of the same year. In view of the difficult situation, the railways applied to the Interstate Commerce Commission for relief, but the Commission, fearing the recurrence of complaints of discrimination against the Intermountain district, refused the petition, except as to a few commodities moving between New York and San Francisco by way of the Southern Pacific Company's Sunset-Gulf route.

With the rapid growth of the Panama traffic, particularly westbound, which amounted to 25,160,545 tons in a year ending in June, 1923, the situation of the Chicago, Milwaukee & St. Paul, the Great Northern, the Northern Pacific, and the other transcontinental railways has been becoming more and more precarious. The adequate supply of service and the successful operation by these carriers depend largely upon the legislative and administrative wisdom of the country. Antagonistic bills, particularly the Gooding Bill, would result only in the destruction of the great rail systems of transcontinental service, in conjunction with such measures as calculated by the Hoch-Smith resolution.

It is perfectly justifiable, from the economic viewpoint, for the railways to make through rail rates from the Atlantic to the Pacific seaboard, low enough to meet the water rates between these points, whenever it is deemed profitable

for them to hold traffic in competition with the water carriers. It is absolutely no social injury to anyone that these railways try to secure as much traffic as they can, and if they are to continue to supply their adequate service, they must be allowed to make such rates as they think desirable for such traffic. If, however, it is the national policy to check the development of the transcontinental railway facilities and substitute therefor the Canal service at the expense of those railways and the public served by them, there is nothing to say.

If rail rates are made according to the willingness of the traffic, to which the coastwise lines are open, with a view to holding and securing negatively and positively, as against the Panama steamship carriers, the logical consequence will be that rail rates to important inland points, even at considerable distances from the coast terminals, are a good deal higher. It is only too natural that in the transcontinental traffic, the rates to Intermountain points, such as Spokane, Salt Lake City, Denver and Reno, are made to approximate the charge tothe Pacific Coast points, plus the back-haul rates. This rate system may make the coast terminal cities the distributing points inland, and prevent the growth of interior traffic centers as rivals to those on the coast. The discrimination is not at all unfair. Even if the terminal rates are kept high up, the coast points will continue all the same to receive the benefits of the cheap steamship service. As long as free competition operates, any interference with the railway rate system can never place the Intermountain district on parity with the coast cities, and

any attempt in this direction would fail unless the coast could be pushed up to the mountains.

When the transcontinental railways were subject to competition with the effective inter-coastwise lines, the rates were made to divert business from the water lines from the Atlantic seaboard to the Pacific ports, on the principle of charging with the traffic is willing to bear. 48 I. C. C. 79; 61 I. C. C. 226. The competitive force has been influencing the transcontinental railway rates, more severely on westbound, owing to the traffic and carrier conditions, but nevertheless, the eastbound traffic is not always free from the influence. It was claimed (in 1922, by a vice-president of the Chicago, Milwaukee & St. Paul Railway) that eighty per cent of traffic from the Orient destined for points east of Chicago, especially to New York, would be diverted to the Panama route, if the railway charges were not made to meet the competition.

After all, as far as transportation competition is concerned, the American railways are exposed to rivalry, not only with one another and the coastal and inter-coastal water carriers, but also with the Canadian systems. There is a possibility of through routes being established between Chicago, Buffalo and other points served by the Canadian railway lines on the one hand, and the points on the Atlantic, the Gulf and the Pacific on the other hand, in part over the Canadian rail lines and their own or other connecting water facilities. Besides, on the strength of Section 27 of the Merchant Marine Act of 1920, very roundabout through rail-water routes may be opened for traffic

between the Middle West and the Pacific seaboard; such as St. Louis so San Francisco via Chicago --- Montreal by the Canadian lines --- San Francisco by German boats; or via Chicago --- Buffalo by the Canadian lines --- New York by the United States lines --- Los Angeles by Japanese boats --- San Francisco, etc. Under such actual and potential rail and water competitive circumstances, coupled with market rivalry between the Pacific ports and between the Middle West and Eastern markets, the railways must be given free play in the making of their rates satisfactorily to meet the situation, entirely liberated from the legal and administrative pressure, if they are to live at all. An attempt to introduce into the transcontinental system the distance principle would mean nothing but the disintegration of the rail carriers, and an undue preference for the Panama route. The Intermountain people would suffer from higher rates and the ultimate deterioration or withdrawal of railway service, instead of obtaining a benefit of what they claim to be a just and reasonable rate system. All the trouble comes of the policy for the inflexible regulation of railway rates.

As regards the Mississippi River situation, competitive conditions disappeared to a large extent about a quarter of a century ago. During the war, however, necessity was felt to supplement the rail facilities with water service, and in September of 1918 the Railroad Administration started a Federal barge line on the Mississippi and Warrior Rivers between St.

Louis and New Orleans, under the name of the Mississippi-Warrior Barge Line Service. With the enactment of the Transportation Act in 1920, it was transferred to the operation of the War Department, and has since been carried on rather as an experiment, but it has not as yet developed to constitute a real force to hold down the railway rates, except as to the section between St. Louis and Ohio River crossings where comparatively heavy traffic has been moving. In June, 1923, there were in operation only seven towboats, fifty barges, and twenty-eight miscellaneous equipment, and the volume of traffic handled during the year ending in the said month was as follows:

Mississippi Section -	
Southbound	327,511 tons.
Northbound	267,604 tons.
Warrior Section -	
Southbound	159,691 tons.
Northbound	126,332 tons.

At present, the railway rates are not much affected by the Barge line charges, which are determined, as a rule, at a 20-per cent differential below the former. Unlike other cases, the railway rates control the water rates in this situation. When the railway carriers were more free from Government regulation as to their charges, the development of water companies on the Mississippi was almost hopeless, as for instance, the Illinois Central could control the situation by driving a steamer line out of existence through cutting its long-haul rates at

the river landings. Much criticism seems to have been directed against the practices of the railways operating along the River, but as a matter of fact, competitive forces, for which neither party was responsible, determined the rates chargeable on the traffic, and the party who could not resist them had to withdraw from the scene, owing to the economic disadvantages. With light traffic, frequent trans-shipments for long haul, bulky lumber mostly not being tributary to the River, dependence upon rail lines for short-haul, and service not so flexible as railways, particularly for the crop seasons, the water carriers were doomed to fail, and the railways were in a natural position to retain the control on the Mississippi. 33 I. C. C. 297; 37 I. C. C. 579; 53 I. C. C. 295. From the economic standpoint, there is hardly any reason why a large sum of money should be thrown yearly into the river to destroy the railway carriers along it by subjecting them to stringent regulation.

The rates between New York and the Trunk Line Territory points east of Buffalo, Pittsburgh, and Huntington on the one hand, and St. Paul, Minneapolis, etc., on the other, have been equalized with differentials with the Great Lakes routes. 14 I. C. C. 299; 46 I. C. C. 595; 61 I. C. C. 289. What economic interest would be served by forcing those rates to keep relatively higher than the rail-water rates, simply because of the illusionary relationship to the local non-competitive rates? Moreover, where boat lines are economically advantageous in the

rivalry with the rail lines, it is even perfectly justifiable for the latter to absorb the former and hold up the level of railway rates to a necessary point, if the railway service as a whole is to be preserved intact.

A great injustice is being perpetrated especially upon the transcontinental railways traversing the Mississippi Region between the Alleghenies and the Rockies, from the water competition which is amply subsidized, wholly unregulated and unduly protected.

The Federal Government had by June 30, 1921, expended $443,000,000 on the Panama Canal service. The coastwise port-to-port carriers are not required to publish their rates, and if the tariffs are published, they are not obliged to maintain them. On July 1, 1922, the Conference Rate Agreement broke, and a rate war ensued, which continued until July 31, 1923. During the strife, rates fluctuated violently, fifty percent being cut overnight in the extreme cases. In fact, those carriers are in a position to "make one man one rate, and another man another rate", and rebating practices are quite possible. They enjoy a monopoly, as a rule, excluding foreign vessels from the coastal service. Not only the Canal is maintained largely from general taxation but port terminals are place at their disposal wolly or practically free. On the other side of the casem the rail carriers are fettered hands and feet in the making of their rates and in the utilization of their empty cars westbound. The problem

is whether the rail and water carriers should be given a fair and equal chance to prove their relative economic advantage, or whether the water carriers should be given a preferential treatment at the expense of the rail carriers and the people at large.

D. Road Competition.

The railways continued to struggle under rail and water competition and market rivalry, and recently they have been driven into a still more precarious situation with the advent of motor competition. There is a growing possibility of motor truck bus competition, especially in respect to terminal handling and local transportation within 100 miles. The competition has already been recognized as a determining factor in the making of railway charges. 88 I. C. C. 235.

With the construction of hard roads, the number of private automobiles and buses has been rapidly increasing, and the short-distance railway traffic has been continuously diverted thereto, chiefly owing to the inflexibility of the railway charges. The number of passengers carried steadily declined from 1,769,913,000 in 1920 to 931,348,000 in 1924, and the heavy loss is attributable mainly to motor car competition. The pleasure-riding class paying full fares or slightly reduced fares has been largely lost, and the remaining short-distance traffic is largely composed of the very low-rate commuters.

The President of the Missouri Pacific testified, in the hearing of the Interstate Commerce Commission, on the position of the western carriers for a five per cent increase in their

freight rates, which was started on September 8, 1925, that in the West the railway revenue had declined substantially since 1920, due to the failure of the railways to meet the competition of buses, automobiles and trucks for short-haul traffic. Hard-surfaced roads had been continuously built, in most cases parallel to the rail lines between points of the considerable movement of merchandise and passenger traffic, until fifty per cent of the Missouri Pacific's System's mileage was paralleled by hard-surfaced or improved roads. Short distance passenger traffic was greatly diverted to buses and private automobiles. As regards freight traffic, the Railway carried from Memphis, Tennessee, to Crawfordsville, Earle, and Parkin, Arkansas, 17 to 32 miles, 7,826,692 pounds of less-than-car-load traffic in 1919, but the volume fell very sharply down to 1,391,958 pounds in 1921, after the construction of hard roads between these points. The effect of motor truck operation was much severer upon the less-than-carload traffic from Little Rock to Alexander, Boyant, and Benton, Arkansas, 17 to 27 miles, the traffic declining from 2,185,758 pounds in 1919 to 180,774 pounds in 1921. Upon the completion of the road-building program in the West, the destructive results would be multiplied manifold. The competition was not temporary but permanent, and yet in the face of such situation the railways were obliged, under the inflexible regulation as to their charges, to continue their service at a substantial loss, because all the traffic was not diverted to motor transportation.

According to the address made by the President of the

Chicago and Northwestern before the Chicago Association of Commerce on September 30, 1925, on the western railway situation, all the railways in the fifty western systems covering 133,000 miles of road were in a very dangerous situation, owing to the enormous increase of motor vehicles encroaching upon the railway field, and the refusal of the State and Federal authorities to adjust their rates to meet the competition, and discontinue their unprofitable branch line service, coupled with the expansion of current and standing expenditures and the increase of taxes.

Out of the 120 abandoned railway lines extending over 2,438.95 miles from 1920 to May 1st, 1925, 8.4 per cent (ten) of the lines covering 4.3 per cent (104.46 miles) of the mileage were given up owing to the failure to meet road competition. Bureau of Public Roads of United States Department of Agriculture. Motor competition is not at all confined to the western railways, but it is univerdal. It is estimated that ten per cent of the entire rail mileage may be profitably scrapped, under the present rate regulation, and on another ten per cent of the mileage (that is, 25,000 miles) fifty per cent of the railway traffic has been diverted to motor vehicles. William P. Hamilton, at Business Association Dinner in New York, November 11, 1925.

On the one hand, the railway carriers are operating under the long and short haul and the distance principles and are being deprived of their economic function; on the other, the motor transportation remains practically free from rate

regulation, and is allowed to take a very offensive attitude against the railways. No State has as yet regulations of the same scope and extent as for the railways, and, moreover, any State is not possessed of adequate power to control interstate motor rates and service, in spite of the fact that the Interstate Commission has also no power over them. Buck v. Kingkendal, State Director of Public Works of Washington; Bush & Sons Co. v. Malloy, Public Service Commission of Maryland. The Supreme Court decision on the former case, involving the State statute regulation buses engaged in interstate commerce, concludes that State laws prohibiting operation over State highways of bus lines between points in one State and points in another State are in violation of the commerce clause. In the latter case, the decision is related to trucks engaged in interstate commerce on highways, and is identical with that in the former case. The result has been that motor buses and trucks, which are allowed to operate almost freely as regards rates and services within a State, can be engaged in interstate commerce, and operate to any extent as and when they please, in contrast to the railways, which must maintain service, under rigid State and Federal regulation, regardless of the condition to meet the competition of uncontrolled motor carriers.

The public, through meeting highway cost by taxation, subsidize and protect the carriers by motor vehicles at the sacrifice of the rail carriers, but seem to have not yet recognized fully the far-reaching effect of such policy upon the transportation

system of the country.

E. Market Competition.

Exactly as in the case of transportation competition, where the railway charges on traffic moving between two common points tend for equalization over all the routes, where two or railway routes, not necessarily of different companies, carry the commodity from different localities to the same market, whether domestic or foreign, or from the same market to different place, there is a tendency for those carriers to equalize the trade opportunities of these places through the automatic adjustment of their charges. The various coal fields in South Yorkshire, which are served by different railway lines, compete for the London market; under such circumstances, each railway seeks to fix rates therefor that will enable the coal mined at the field or fields it serves to move to the common market. The export traffic from Pittsburgh, Cleveland, Cincinnati, Chicago, Kansas City, St. Paul, and other central-western points to Europe is given such rates by the railways serving between those points and the ports on the Atlantic and the Gulf, as will equalize those ports so that they may participate in the handling of the traffic. Usually, market competitive forces are at work in the making of equalized rates on routes of different railway companies, under the economic principle that almost any rate to secure traffic is better than no business at all, but they often influence the rates on lines of the same system, solely in order to serve in equality the trade interests of different places along its

lines. Liverpool and Bristol compete for the same export traffic, and the only railway system that serves these ports is the Midland Railway. Even without grouping or equalizing them, the same amount of traffic may, without diversion, move over the line of the said railway through whichever port that gives lower rates, but nevertheless, they are grouped and uniform rates are quoted for them, simply from the pressure of the market competition. Likewise, the Humber ports (Hull, Goole, and Grimsby) are equalized with or without differentials for rate-making purposes. Hamburg, Rotterdam, and Antwerp are given an equal opportunity for the handling of the export steel traffic from Dusseldorf. The rates are equalized, with differentials, over the German railways, as follows:

Ports	Distances (kilometres)	Local Rates (marks per ton)	Export Rates (marks per ton)
Hamburg	386	9.70	5.40
Rotterdam	220	6.10	5.90
Antwerp	194	7.20	5.20

In the United States, too, the Interstate Commerce Commission recognized to some extent the force of market competition upon the making of rates, in spite of its continuous attempt during recent years to disregard it, and stated, "the Commission may consider market competition". 31 I.C.C. 495; 31 I.C.C. 511; 41 I.C.C. 1.

Innumberable instances may be cited where different places were equalized through the establishment of rates on the basis of the willingness of traffic to pay. Unless the principal jobbing centers on the Missouri River are equalized in respect to business from the

East, and if, instead, rates therefor are fixed on the cost or distance basis, most of them will perish and the railways serving them will suffer. The Northwestern and the Illinois Central are tied up with Omaha; the Santa Fe and the Chicago-Alton with its rival Kansas City; and the Burlington, the Rock Island, the Chicago, Milwaukee & St. Paul, the Wabash, the Chicago-Great Western, and the Missouri Pacific serve both cities. If Omaha and Kansas City are to participate in the business in the highly competitive territory in the western parts of Kansas and Nebraska, and in Colorado and Wyoming, and at the same time the mutual interest of the above-mentioned carriers is to be considered, the rates for the two cities must necessarily be equalized. There is nothing abnormal in the rate structure between the Mississippi River crossings and Missouri River crossings, where uniform rates are in effect except over relatively greater distance sections, such as from points on the lower Mississippi River to Sioux City, Sioux Falls, and other points on the upper Missouri River, on which slightly higher rates prevail. To be specific: In July, 1922, the rates from Duluth to Sioux City, Sioux Falls, and Omaha; from St. Paul to Omaha; from Minneapolis to Omaha; from Milwaukee to Sioux City, Omaha, and Kansas City; from Chicago to Sioux City, Omaha, and St. Joseph, Atchison, Leavenworth, and Kansas City; from St. Louis to Sioux City; and from Peoria to Sioux City, were all uniform. ($121.50 for first class). Because of shorter distances, a lower rate ($91.50 for first class) was quoted for traffic from Minneapolis to Sioux City; from St. Paul to Sioux City; and from St. Louis to Omaha, St. Joseph, Atchison,

Leavenworth, and Kansas City.

These inbound rates are equalized to place the jobbing centers on equal footing, in respect to business with the supplying market, and outbound rates must likewise be equalized to afford different jobbing centers an equal opportunity in relation to distribution among local consuming points. The struggle of the jobbing centers west of the Missouri River with the Missouri River cities, such as Lincoln and Grand Island versus Omaha; Topeka, Hutchinson, and Wichita versus Kansas City, etc., has resulted in the Missouri River combination rate system. 43 I.C.C. 689. 44 I.C.C. 339.

Competition among Butte, Helena, Anaconda and other jobbing centers in the West, and among the carriers serving these points is responsible for the creation of the Montana common point system in relation to the traffic from Chicago, St. Louis, and other Mississippi-Missouri points. Thus the class rates from Chicago, Duluth, and Memphis to Butte and Salt Lake City; from the Missouri River points to these places, and from the Mississippi River points, St. Paul included, to these places, have all been equalized, respectively.

Likewise, the Colorado Common Point Group has been created, extending along the base of the mountains from Cheyenne to Trinidad, Duluth and Twin Cities have been grouped in respect to the traffic in the western territory in the Dakotas.

If the west-bank Lake Michigan ports, such as Manitowac, Sheboygan, Milwaukee, Racine and Waukegan, were not grouped with Chicago for the business with the East, they would not be able to

participate in it. 44 I.C.C. 602.

In the Mississippi River situation in relation to the East, the crossings have been equalized on the basis of 117 per cent of the Chicago-New York rates, and their rates have been applicable as proportionals for the through rates to breaking points further west, in spite of the wide variations in distance between these crossings, as follows:

Dubuque - New York	1,079 miles.
Clinton - New York	1,050 miles.
Davenport - New York	1,095 miles.
Muscatine - New York	1,119 miles.
Burlinton - New York	1,102 miles.
Fort Madison - New York	1,121 miles.
Keokuk - New York	1,119 miles.
Quincy - New York	1,129 miles.
Hannibal - New York	1,118 miles.
Louisiana - New York	1,144 miles.
St. Louis - New York	1,065 miles.

28 I. C. C. 47; 29 I. C. C. 530; 32 I. C. C. 471; 33 I. C. C. 409; 33 I. C. C. 673.

The rates between the points in Iowa and along the River, and westward to the Missouri River crossings, were equalized in differential relationships. 21 I. C. C. 546. It was economically necessary to equalize the rates at all the Mississippi River crossings for the traffic from or to the points in Indiana and Ohio. 46 I. C. C. 20; 46 I. C. C. 39; 58 I. C. C. 491.

For the mutual benefit of the railways and shippers, the rates on the lake cargo coal from the West Virginia and Kentucky mines to the Lake Erie ports, to furnish back-loading to the boats bringing ore from the Minnesota ranges, were equalized. The business was highly competitive as between the carriers and between the mines, and their participation in the business was only possible when rates were equalized from the points of origin.

The rates from the West Virginia mines to tidewater were also equalized. In 1912 the Norfolk and Western was permitted to raise its rates from the Pocahontas field above the level of the rates from the New River field of the Chesapeake and Ohio. Upon the refusal of the Chesapeake and Ohio to advance its rates correspondingly, the Norfolk and Western had to withdraw its advanced rates, for "more traffic at lower rates proved to be better business for the carrier than less traffic at higher rates".

If Kansas salt and Michigan salt are to find their market in the intervening territory, the railway charges must be equalized, exactly as in the case of Kansas flour and Minnesota flour for the eastern market.

Pennsylvania anthracite coal must be put on the market in many northern and northwestern states in competition with Indiana and Illinois soft coal, and this is possible only if the rates on the former are equalized with those on the latter traffic, with or without differentials.

To participate in the business in the territory including Chicago and Milwaukee, in competition with eastern and southern points of supply, the railway lines in Iowa had to quote nine cents on the first class for the common market, with ten cents for the nearest points in Illinois and twelve cents for still nearer points in Wisconsin. If they had raised the rate above nine cents, they would have sustained a heavy loss. 41 I. C. C. 1.

California, Louisiana and the Atlantic seaboard compete with each other for the Chicago market with their cane sugar supply. The western refiners were barred from Chicago, and in 1914 the western railways proposed a rate to Chicago to enable the refiners to reach the market, and also themselves to utilize their eastbound empty cars. The rate to the Missouri River crossings had been fixed at 55 cents, in equalization (with a 23-cent differential above) with the rate from New Orleans. The New York rail-lake route to Chicago had been 46 cents in equalization (also with a 23-cent differential above) with the rate from New Orleans. The proposed rate from the West to Chicago was therefore 46 cents. The 55-cent and 46-cent rates were determined exactly according to the willingness of the cane sugar traffic to pay, without the least reference to distance. If the distance principle had been observed, the western sugar industry would have been denied participation in the business at the Chicago market.

Not only railway rates, but also transit privileges have been extensively employed to equalize the competitive situation. The railways serving the grain fields and the primary markets, particularly Twin Cities, Chicago, and the Missouri River crossings, had to control the grain traffic destined for the estern districts by means of the equalization of the charges thereon. The transit scheme was resorted to for this purpose, in which full in-rates were quoted for the traffic moving from points of origin to transit points, and the balance of the cut through rates was charged for the movement thereof from the transit to eastern point. 33 I. C. C. 133. Milling business was, as a result, concentrated at the rate-breaking points, such as Twin Cities, Chicago, St. Louis, and the Missouri River crossings, the other intermediate towns, where the in- and out-rates were in excess of the through rates, were consequently shut out of business, for which the economic forces alone were responsible.

The fabrication of steel in transit into bridge materials and structural steel has also been employed as a means of equalization. In 1908-9, the Wheeling and Lake Erie Railroad inaugurated a fabrication-in-transit arrangement at Toledo and Canton, Ohio, and the charges for this privilege were so made as to equalize the switching costs in the Pittsburgh district. The result was that the Toledo steel fabrication plants were placed to compete effectively with the plants in the Pittsburgh district, by establishing a through rate from Pittsburgh, instead of the otherwise Toledo combination for the structural steel to Detroit. The Lake Shore extended the privilege

to the plants at Cleveland, Buffalo, and Elkhart, Indiana. The Big Four had to add Indianapolis, the Pan Handle (Pennsylvania), and Maurice. The Baltimore and Ohio followed the practice, and in less than six months after the Wheeling and Lake Erie introduced the scheme, the fabrication privilege widely extended to points in Ohio and Indiana. 14 I. C. C. 121; 15 I. C. C. 370; 29 I. C. C. 70. Equalization through this means has since been developed year after year. 1 I. C. C. 401; 10 I. C. C. 193; 16 I. C. C. 232; 18 I. C. C. 280; 22 I. C. C. 160; 23 I. C. C. 151; 23 I. C. C. 672; 24 I. C. C. 340; 25 I. C. C. 663; 26 I. C. C. 204; 27 I. C. C. 286; 27 I. C. C. 451; 29 I. C. C. 70; 29 I. C. C. 106; 29 I. C. C. 565; 31 I. C. C. 280; 32 I. C. C. 185; 32 I. C. C. 319; 36 I. C. C. 20 49 I. C. C. 674.

Before the War, the class rates were the same to Atlanta from New Orleans, the Mississippi River towns south of Memphis, the Ohio River crossings, and Baltimore (via rail and water), to enable all these points to stand on equal terms in respect to their southern trade.

The rates from St. Louis to Texas have been made applicable to the upper Mississippi River crossings to divert traffic to the northern crossings and the Kansas City gateway and route.

The Missouri River crossings and Twin Cities are equalized for traffic to Butte, and St. Paul, Minneapolis, Kansas City,mand Omaha are differentially equalized for traffic from Buffalo, Pittsburgh, and the points east of Huntington within the Trunk Line Terri-

tory, for the purpose of fixing the propostionals to the Missouri River on the traffic from the East to Butte.

The rates on California citrus fruits have been equalized with those on Florida citrus fruits, destined for the markets east of the Mississippi River. Southern California citrus fruits were in competition for the eastern markets with the lemons from Sicily. The cost of production was much cheaper than in California, and the protective duty of $1.00 per hundred pounds (increased by the Payne Tariff Act to $1.50) was insufficient to enable California growers to participate in the business in the territory east of the Mississippi River, owing to low water transportation available to the Sicily lemons. Rates from California had to be made according to what the traffic was willing to pay, if it was to find its way against the competitor. 19 I. C. C. 148.

California desired to send its explosives to the El Paso market in competition with Colorado and Kansas City, and rates were made without deference to the distance principle, 40 I. C. C. 573.

Only through the violation of the long and short haul principle and the fixing of rates according to the willingness of the traffic to pay, Kansas City and St. Louis could find a market at Texarkana for their cement in competition with New Orleans, Dallas and Shreveport. 48 I. C. C. 201.

In the westbound transcontinental situation, the market competitive force exerts tremendous influence upon the rate system, in conjunction with the intercoastal competition. The territory east

of the Missouri River is in a position to send a large supply of manufactured products to the western districts the haul of the supply from the East to the West passes through points of conflicting interests; the farther sources of supply enjoy the benefit of water competition; and the interests of the participant railways are divided, those serving Chicago, Twin Cities, St. Louis, and other Middle West cities desiring to place the business interest of these points on equal terms with those of the Atlantic seaboard competitors on the Pacific Coast markets. Equalization will be inevitable, if all the interests concerned are to be served equally according to the economic forces. The intermediate rates must necessarily be the combination upon the nearest terminals, as for instance, the Reno rate will be the through rate to Sacramento plus the local rate back, to meet the business from New York to Reno by way of the Sunset-Gulf line to New Orleans or Galveston and thence by rail to the destination. Market competition, coupled with transportation competition, is solely responsible for the consequent concentration of jobbing business and population on the Pacific Coast, such as at Seattle, Portland, and San Francisco, which may be detrimental to the development of inland towns, Reno, Spokane, etc., but which in reality is merely a logical result of their being unfortunately in a geographically disadvantageous location. Up to the war emergency, the Interstate Commerce Commission had upheld this situation, in recognition of the need of keeping the intermediate rates on a higher level to

secure for the railways a necessary revenue, and even afterwards, the Commerce Court still endorsed the carriers' contention in opposition to the Commission's refusal to depart from the long and short haul clause. 5 I. C. C. 478; 9 I. C. C. 250; 9 I. C. C. 318; 15 I. C. C. 376; 19 I. C. C. 162; 21 I. C. C. 400; 32 I. C. C. 611; 34 I. C. C. 13.

Competition at New York, Philadelphia, Baltimore and other North Atlantic ports, both for domestic and foreign traffic to and from the Middle West, has necessitated the equalization of the rates, with certain differentials created to counterbalance the differences in the cost of ocean carriage and other conditions. With better harbor facilities, shorter ocean journey, and more established houses and steamers in service, New York is given higher charges by rail than Philadelphia or Baltimore. The Interstate Commerce Commission theorized the quotation of lower charges for the latter ports on the basis of the distance principle, but in point of fact, distance had nothing to do with the determination of competitive rates. If the distances had been greater than New York, the rail rates would have been lower notwithstanding, insomuch as the port facilities and ocean rates were disadvantageous as compared with those at New York, for the total charges over the entire length must all all events be equalized to place those ports on equal terms. 11 I. C. C. 13; 24 I. C. C. 78; 24 I. C. C. 674; 27 I. C. C. 238.

The South Atlantic and Gulf ports are also differentially equalized in their relationship to each other and to the North Atlantic

and Pacific ports. 9 I. C. C. 534; 44 I. C. C. 727.

Port competition between Seattle, Portland, San Francisco, Los Angeles and San Diego, combined with the competition of the rail carriers serving these ports, the competition with the rail carriers serving the Atlantic and Gulf ports, and the competition with the Panama Canal route, has created the equalization of the terminal rates with or without differentials, and the lower level of rates for the export and import traffic than the domestic traffic. 162 U. S. 197; 239 U. S. 352; 21 I. C. C. 640.

F. Industrial Competition.

The phrase, "industrial competition", is employed here to denote a form of competition which confronts infant industries in their struggle to force their way through strongly established rivals into market. If new industries have ample potentiality of development, there should be no good reason, socially or economically, why they should not be encouraged by means of a special concession in the railway rates.

In the making of charges, weight must be given to the long-time interest, and rates below cost may be perfectly justifiable under particular conditions. It may certainly be an act of wisdom for a railway to pocket a temporary loss rather than risk "killing the goose that lays the golden egg". Again, there may be cases where rates less than additional costs may profitably be made to expect therefrom a large amount of remunerative traffic; for instance, a nominal charge is levied upon the conveyance of coke to iron and

steel works. Raw materials may thus be hauled at a loss to obtain traffic arising from the movement of the finished articles. Not only raw materials for the production of higher-grade articles, but very low fares may often be made for commutation passengers between cities and their suburban districts, to promote the growth of the localities, which will create the local movement of merchandise of a substantial volume and passengers paying full fares.

After all, the application of the distance principle ought to be minimized especially in the case of setting up new industries. This is particularly necessary where there are empty cars available for the carriage of the products of infant industries or raw materials for the production of finished higher-class articles, because the lower rates will create increased tonnage which yields some contribution toward joint cost. When the Great Northern Railway was first constructed in the Pacific Northwest, the districts were undeveloped and the preponderance of the empty car movement was naturally eastbound. Lumber was the only produce. Whatever traffic that the railway could secure for eastward conveyance contributed above the out-of-pocket expense, extra coal cost, and the extra clerical help in the stations in billing and checking the freight, would prove a clear gain. The result was the establishment of very low rates for the lumber traffic for the important points in the East, according to what it consented to pay. 14 I. C. C. 23; 222 U. S. 541.

Special low rates may be given also for the protection and encouragement of home products going to foreign markets. This is par-

ticularly the case with the German railways. Iron and steel for building, repairing or fitting out sea and river vessels from German stations to German ports fro export by sea to other countries were given a rate of 2.2. pf. per ton per kilometre, as against the local rate of 4.5 pf. Dynamo cases from Upper Silesian and Rhenish Westphalian stations to South German frontier stations for export to Switzerland and France moved at 1.7 pf. as against the regular rate of 3.5 pf.

The protection and encouragement often take a different form, and home industries areassisted by the provision of the cheap conveyance of raw materials coming from foreign countries. Minerals and petroleum from the German harbors on the North Sea and the Baltic to Southwest Germany, Bavaria, etc., were given a rate of 4.0 - 2.2 pf. per ton per kilometre, as against the local rate of 6 pf.

The fixation of railway charges according to what the traffic is willing to pay, in the course of future expansion, is perfectly justifiable, because it is in the interest both of the railways and the industries or localities.

VI. TREND IN LEGISLATION.

If railway rates are to serve the best interest of the carriers as well as of the public, they must be made either on the basis of the ability of traffic to pay in the rare cases of the total absence of competition, or on the basis of the willingness of traffic to pay, in the majority of cases, insomuch as most traffic is subject to competitive influence. Whether determined according to ability or willingness, the rates will logically have no reference to the distance of haul, and, therefore, what are called the long and short haul principle and the distance principle are not supportable from the economic point of view.

Though perfectly justifiable socially and economically, charging more for a shorter haul than for a longer haul, and even the same for a shorter distance as for a longer distance, has an appearance of gross injustice in the eye of the general public. Therefore, the economic practice has often been made impossible by public opinion, even if not by positive law. Most of the European countries have enacted the aforesaid principle into administrative law, and even Great Britain, where economic principles have long prevailed and political influences have been successfully barred from seeking their way into railway charges, has had a statutory provision of the similar nature since 1888, though it has never been invoked into actual application. Canada has also enacted the long and short haul principle, and every state in the United States has the long and short haul provision

enacted in the same manner as the Federal Government. The general trend in public regulation clearly indicates that the railway rate situation has been gradually drawn into politics and losing its economic significance and function.

A. Great Birtain and Canada.

In Re Investigation of Advances in Rates 20 I. C. C. 307, 1911, Commissioner Lane expressed his opinion that the attitude of the American people towards their railroads was one of friendship, not of enmity, and that no other people had been more generous in their treatment of such great enterprises than the American people. Reference was made to the extensive land concessions granted to many roads by the Federal Government, and the grants of land for rights of way and terminal purposes, the voting of bonds in aid of construction, and guarantees of bond issues made by the State and Municipal Governments. He showed that, while there doubtless had been "spasmodic and demagogic effort" in various sections of the country, the trend of control and regulation as a whole had been conservative, wise and sympathetic towards the investors in railway enterprises.

He contrasted the action of the Government of the United States with that of the British Government, and concluded that the American railroads had manifestly been allowed far more play for the exercise of individual judgment and initiative than the railways in Great Britain. As regards the Canadian situation, he stated that the Act to Regulate Commerce granted to the Interstate Commerce

Commission much less of power than was vested in the Canadian commission.

The carriers' complaint that they no longer had a free hand in the matter of rate making was set aside on the ground that they had fared better under such control as that to which they were subjected than under a preceding regime of laissez-faire.

It is true that the British and Canadian regulation of railway construction and management has on the whole been more comprehensive and rigorous, but the fact is that the railways have been more free than the American railways in respect of the rate situation, although the former are legally subject to practically the same control in relation to individual rates and rates as a whole, particularly to long-and-short-haul and distance-rates.

While in other countries there are normal railway tariffs established, though often with so numerous exceptions thereto that the normal rates disappear almost altogether in actual cases, Great Britain has never had a recognized normal tariff of goods rates, probably due to the instinctive hatred of the English people for logic and symmetry, and largely due to the short distances to be covered and the ubiquitous competition as between sea, canals, and railways. Even for 20 or 30 miles uniform distance tariffs cannot be applied, not more than a quarter of the total merchandise traffic being carried at scale rates. The result is the absence of formal tariffs, and the publication of the immense number of separate and individual tables; indeed, as many

separate tables of rates as there are separate stations. The so-called "exceptional" is in point of fact a rule.

However, the Railway and Canal Traffic Act of 1888 empowers the Railway Commission to prohibit higher rates for shorter distances, but it must be noted that it does not require the Commission to prohibit the practice, and that no case has ever since actually been decided under the provision of this Act; Sec. 27 (3) being as follows:

"The Court or the Commissioners shall have power to direct that no higher charge shall be made to any person for services in respect of merchandise carried over a less distance than is made to any other person for similar services in respect of the like description and quantity of merchandise carried over a greater distance on the same line of railway". Numerous rate cases were brought for decision, but all of them were dealt with under Sec. 2 of the Railway and Canal Traffic Act of 1854, making illegal the carrier's act of giving "any undue or unreasonable preference or advantage to, or in favor of, any particular person or company, or any particular description of traffic, in any respect whatsoever". Since it was impossible to define precisely what constituted undue preference, each case was decided on its merit. Evershed v. London and Northwestern Railway Co., 3 A. C. 1029; Skinningrove Iron Company v. North Eastern Railway Company, 5 R. and C. C. 244; The Rhymney Iron Company, Ltd. v. The Rhymney Railway Company, 6 R. and C. C. 60; Distington Iron Company, Ltd. v. London and Northwestern Railway Company, 6 R. and C. C. 108; Aberdeen Commercial

Company v. Great North of Scotland Railway Company, 3 R, and C. C. 205; Harris v. Cockermouth Railway Company, 27 L.J.C.P. 162; Forwood v. Great Northern Railway Company, 12 R. and C. C. 89; Watkinson v. Wrexham, Mold and Connah's Quay Railway Company, 3 R. and C. C. 446; Mansion House Association v. London and Southwestern Railway Company, 1 Q. B. 927.

Again in 1921, the Railways Act gave the Railway Rates Tribunal power to prohibit competition over circuitous routes by more than a certain percentage, but "it remains yet to be seen what, if any, use the Tribunal will make of this power". (Acworth: Railway Economics, 1923). Section 52 of the Act runs as follows:

"Sec. 52. (1) Where any two places are connected by routes belonging to or operated by two or more railway companies (being amalgamated companies or railway companies to which a schedule of standard charges has been applied) and the standard rate for the carriage of merchandise by the first mentioned route may, subject to the provisions of this section as to circuitous routes, be charged as the standard rate for the carriage of merchandise by the first mentioned route may, subject to the provisions of this section as to circuitous routes, be charged as the standard rate for the carriage of merchandise by such other route.

"(2). For the purpose of this section, a circuitous route means a route which is longer by 30 per cent or more than the shortest route between the two places.

"(4) Paragraph 2. Provided that, if the proposed circuitous route exceeds by 50 per cent or more the shortest route between the two places, this section shall not be applied thereto without the consent of the Rates Tribunal".

In Canada, the long and short haul principle has also been enacted, but it allows a very flexible interpretation. The Board of Railway Commissioners has been quite liberal in its attitude, and prompt approval has invariably been granted to the application for "competitive tariffs". Section 314, Paragraph 5, of the Canadian Railways Act of 1919 reads as follows:

"The Board shall not approve or allow any toll which, for the like description of goods or for passengers carried under substantially similar circumstances, in thesame direction, over the same line or route, is greater for a shorter than for a longer distance, within which such shorter distance is included, unless the Board is satisfied that owing to competition it is expedient to allow such toll".

In Great Britain and Canada, the braad concept of justice as to relative charges for longer and shorter distances has been materialized in a statutory form, but no serious attempt has been made to interfere with the railway rates on the strength thereof. The provisions seem to have remained in the statutory books merely as a warning in general terms to the carriers against making rates on personal consideration, that will constitute discrimination, undue and unreasonable

from the economic point of view. The policy has been to draw a clear-cut line between justifiable and unjustifiable discriminations, and to condemn only such discriminations as are not justifiable in the light of the economic law. According thereto, discriminations are undue if they do not represent exactly the differences in the economic conditions under which particular charges are fixed.

B. The United States.

The present statutory provision in respect to long and short haul rates is an outgrowth of experience during the last thirty years, and the evolution thereof furnishes an interesting illustration of the trend in the public opinion on the railway rate situation during this period.

1. 1887

The rate structures are, on the whole, the result of the interplay of various economic forces, and the rates that exist at any given time are justifiable, so long as they remain the logical consequences of these factors, free from any unnatural personal interference. As a matter of fact, however, the rate systems that had developed by the 1880's might, to some extent, be the products of some obnoxious interference, either conscious or unconscious, from the railway managers. Excessive and, consequently, destructive competition as between carriers for the participation in traffic, and also as between markets, productive and sitributive, for the extension of business, had undoubtedly constituted an outstanding factor in the making of some

particular rates. Moreover, some personal influence might have made itself felt in the establishment of particular charges, in the absence of effective and unified public regulation.

No matter whether the rate structures then prevailing were the results of the operation of economic forces, or they were the products of unnatural manipulations, complaints arising from the public located at less favored points had by this time become so severe, that the situation became involved in a political concern of the nation, the result thereof being the passage in 1887 of the Act to Regulate Interstate Commerce.

Two different bills were introduced, one from the House, by Reagan, and the other from the Senate, by Cullom. The Reagan Bill was to make the long and short haul principle absolute in its application, and the Cullom Bill was to recognize some exceptions to conform to special cases. The result of the Conference Committee was a compromise between the two proposals.

The principle, as embodied in Sec. 4 of the Act, was as follows:

"That it shall be unlawful for any common carrier subject to the provisions of this Act to charge or receive any greater compensation in the aggregate for the transportation of passengers, or of like kind of property, under substantially similar circumstances and conditions, for a shorter than for a longer distance over the same line, in the same direction, the shorter being included in the

longer distance; but this shall not be construed as authorizing any common carrier within the terms of this Act to charge or receive as great compensation for a shorter as for a longer distance. Provided, however, That upon application to the Commission appointed under the provisions of this Act, such common carrier may, in special cases, after investigation by the Commission, be authorized to charge less for longer than shorter distances for the transportation of passengers or property; and the Commission may from time to time prescribe the extent to which such designated common carrier may be relieved from the operation of this section of this Act".

The scope of the application of the provisions of the Act was specified under Section 1 to be the carriers wholly by rail and also those partyly by rail and partly by water, when both were used under the common control or management for continuous carriage, engaged in interstate or foreign transportation. The scope, however, was extended to include pipe lines, express companies, and street-car companies, under the Hepburn Act of 1906, and telegraph, telephone and cable companies, wire or wireless, under the Mann-Elkins Act of 1910.

The general attitude of the Interstate Commerce Commission in the interpretation and administration of the 4th Section provision was broad and lenient, particularly during the early days. "The act to regulate commerce was not passed to injure any interests, but to conserve and protect. It had for its object to regulate

a vast business, according to the requirement of justice. Its intervention was supposed to be called for by the existence of numerous evils.....The considerations which were influencing in determing.....were not more the relief of the carriers from danger of loss than the prevention of threatened disturbance of business interests in certain localities, which by its reflex action seems liable to embarass seriously the entire country". 1 I. C. C. 19. The Commission points out the difficulty in this rigid application of the clause, because of the distance element being made the only thing in the 4th Section, "without consideration of other transportation obstacles, such as grade, curvature, etc., which are just as real and which involve expenses which properly may be reflected in the rate as greater distance may". Henry C. Hall, Chairman of the Interstate Commerce Commission, before the Interstate Commerce Committee of the United States Senate, on the Goodway Bill, February 27, 1924.

The Interstate Commerce Commission acted on the principle that the effect of actual and controlling competition in respect of traffic, which was important in amount, made particular circumstances and conditions substantially dissimilar, so that charges at competitive points might justifiably be depressed sufficiently to meet the competition, lower than at intermediate points. The extent to which this principle was applied, however, was somewhat limited, since the Commission narrowed the scope of competition

within the competition of the railways with those carriers which were outside of the control of the Commission. Consequently, and the departure from the long and short haul clause was limited to the cases of competition with water lines, intrastate railway lines, and the Canadian railway lines. As regards market competition, it was not regarded to constitute a sufficient ground for relief, but, as a matter of fact, insomuch as it was generally connected with transportation competition, it did make a factor in the departure from the clause. 1 I. C. C. 6; 1 I. C. C. 278.

The question, whether circumstances and conditions were made dissimilar by the force of competition so that the provision of Section 4 might be departed from, was originally left with the railways to decide in the first instance. There seems to have been two opposing views at the outset, one of which was that no exception was lawful without the sanction of the Commission, and the other of which was that any sanction or order of the Commission was required, when particular circumstances and conditions were dissimilar, because in that case a carrier would commit no breach of law by charging less on the same for a longer distance, though responsible if it was later found that the circumstances and conditions were misconceived or misjudged to be dissimilar. According to the latter construction, an order for relief was needed only where the circumstances and conditions were not plainly dissimilar, but, neverthe-

less, there might be some reasons and equities that would sanction such charge.

The latter view prevailed. "We are satisfied that the statute does not require that the Commission shall prescribe in every instance the exceptional case and grant its order for relief before the carrier is at liberty in its tariffs to depart from the general rule....If, in any case, the carrier, without first obtaining an order of relief, shall depart from the general rule, its doing so will not alone convict it of illegality, since if the circumstances and conditions of the two hauls are dissimilar, the statute is not violated". 1 I. C. C. 83. Again, it was held later that a carrier, if it was satisfied for themselves that dissimilarity existed in the circumstances and conditions, had not to observe the Section 4 principle, and had not as a preliminary to that unobservance to apply to the Commission for relief, the cases being limited to competition with carriers not subject to the Act, and competition that developed on its own line, as distinguished from a group in which it was a participant. 5 I. C. C. 324.

Thus the railways could determine in the first instance the existence of controlling competition, which might constitute dissimilarity within the meaning of the clause, and whenever they saw expedient they were in a position to make depressed charges at competitive points in departure from the long and short haul principle. The Commission confined its power to intervene to the

cases where complaints were made, or the Commission had a doubt as to the justifiability of particular depressed charges that had been made by the railways.

This lenient attitude of the Commission naturally resulted in the practical non-operation of Section 4 of the Act, and pressure began to be felt for the more rigorous application thereof. Consequently, in 1892, the Commission changed its policy and deprived the railways of power to determine for themselves the dissimilarity in circumstances and conditions and to initiate charges in violation of the general rule on their own judgment. When they desired to meet competition by means of depressing the charges on or under the level of the intermediate charges, they were first to apply to the Commission for relief. The Commission would then institute investigations, and only when it was satisfied it would grant the relief prayed for. 4 I. C. C. 121; 4 I. C. C. 267; 5 I. C. C. 324; 5 I. C. C. 596.

In 1900, however, the Supreme Court held that any competition whatsoever would sufficiently constitute dissimilarity in circumstances and conditions, and that a carrier was at liberty to make competitive rates in such cases without applying to the Commission, 175 U. S. 648, and thereafter the Commission had very little, in fact, no way of effectively dealing with departure.

The Hepburn Act of 1906 did not change the 4th Section, but gave the Commission power to prescribe future rates. The Com-

mission power to prescribe future rates. The Commission started an investigation into the class rates to the Intermountain country on transcontinental traffic from the East, and prescribed, in 1910, maximum rates to Reno, and others from the Missouri River crossings, and others eliminating departures in respect to class rates on trans-continental freight. 19 I. C. C. 238. But this adjustment was not effected on the 4th Section, but on the power to prescribe rates.

As regards the court attitude, it was rather in favor of the carriers during this period. The original interpretation of the Interstate Commerce Commission that carriers might depart from the general rule in the 4th Section, without an order of relief from the Commission, in cases where they deemed that substantial dissimilarity existed in circumstances and conditions, was in substance affirmed by the Supreme Court of the United States. The ground thereof was that wherever competition existed, substantial dissimilarity was created in conditions to allow carriers of their own motion, without previous consent of the Commission, to charge higher rates for shorter than for longer distances, or the same rates for the former as for the latter, in respect to the same service. Competition would justify the departure from the general rule, and the competitive rates thus made were, prima facie, reasonable. 168 U. S. 144; 175 U. S. 648; 181 U. S. 1.

Upon the change being made in the attitude of the Commission, in the restriction ofthe scope of the competition that would justify the departure, and later in the requirement that carriers must, first of all, apply for relief before they depressed their charges at competitive point, the railways felt that they were deprived of their rights and sought relief in court decision. In a number of cases, the Court completely denounced the Commission's new attitude, and stuck to their principle that competition could create substantial dissimilarity and justify the departure without an assent of the Commission. Furthermore, the Court held in 1900 that competition of any kind, no matter whether with carriers subject to the Act and therefore under the control of the Commission, or not, constituted an effective factor that would make circumstances and conditions substantially dissimilar. Real and substantial competition would amply justify the departure from the 4th Section provision automatically, not as a matter of grace and favor of the Commission, but as a matter of right. 175 U. S. 648. Thus the former court attitude was re-affirmed, and this continued until 1910, when an amendment was made to meet the situation. 168 U. S. 144; 40 L. Ed. 940; 42 L. Ed. 414; 44 L. Ed. 309; 45 L. Ed. 719; 47 L. Ed. 1047; 181 U. S. 1; 197. During this period the Commission was left almost without power to regulate long and short haul charges before they were actually

made. The result of this series of adverse court decisions was that the railways could practically control the whole situation without interference from the Commission, as far as Section 4 of the Act was concerned, the provision of the clause becoming almost null and void in the actual application, as reported by the Commission in 1897. Carriers were quite at liberty to violate the principle whenever they desired to meet competition of any kind, without regard to the Commission. The only cases where the Commission could deal with the situation were those which involved the question of undue and unreasonable discriminations, or which rested on the application to be filed by the carriers for departure upon grounds other than controlling competition, for instance, the applications by certain railways for relief in connection with the World's Fair held in Chicago and the crop failure in a certain territory, in which orders of relief were granted because those events constituted special cases calling for lower rates and fares than at the intermediate points. 6 I. C. C. 323; 6 I. C. C. 328; Later, in 1906, when the Commission was given power to prescribe future rates, it was enabled to intervene in the long and short haul charges, only on that account as in the case of the transcontinental class rate adjustment of 1910.

However, the carriers remained responsible for their judgment as to the existence of dissimilarity in circumstances

and conditions in making competitive rates on their own initiative, and the Court maintained through that, when a question arose in connection with the justification of the departure from the provision of Section 4, the burden of proof that dissimilarity existed in circumstances and conditions should fall on the carriers concerned.

Another set of court decisions rendered the provisions of the long and short haul clause still less effective. It was decided that where a through tariff was established over connecting lines, such tariff on a joint line was not a standard whereby the separate tariffs in effect on those component lines were to be measured in determining whether Section 4 was violated. According to the existing provision, the charge at a longer-distance point was to be considered in relation to the charge at a shorter-distance point on the same line, and this court decision differentiated a through route from a separate and independent line, holding that Section 4 of the Act was not to apply to the relationships between a charge on a route and a charge on a line. A line, according to the decision, was a line of a single railway, and therefore the provision did not refer to the cases where more than two different railways established a joint route and made depressed through charges. A railway, consequently, might make any depressed proportionals under any circumstances and conditions whatever, without the least regard to the relation

with the rates on its own line composing the through routes over which such proportionals would apply. 3 C. C. A. 347; 52 Fed. 912; 162 U. S. 184; 40 L. Ed. 935. The result of the court attitude was the complete extraction of teeth from the provision of the long and short haul clause, and the virtual deprivation of the Interstate Commerce Commission of power in respect to the enforcement of the said provision.

2. 1910

The original purpose for which the long and short haul principle was incorporated in the 4th Section of the Act to Regulate Interstate Commerce was thus frustrated by the court interpretation of the clause, due to the insufficient wording thereof. If, therefore, the principle was to be perpetuated at all, some amendment must be enacted based upon past experience.

An amendment was accordingly made in Section 4 of the Act in 1910, through the Mann-Elkins Act. The clause as amended reads as follows:

"That it shall be unlawful for any common carrier subject to the provisions of this Act to charge or receive any greater compensation in the aggregate for the transportation of passengers, or like kinds of property, (under substantially similar circumstances and conditions) for a shorter than for a

longer distance over the same line *or route* in the same direction, the shorter being included within the longer distance, *or to charge any greater compensation as a through rate than the aggregate of the intermediate rates subject to the provisions of this Act*; but this shall not be construed as authorizing any common carrier within the terms of this Act to charge or receive as great compensation for a shorter as for a longer distance; Provided, however, That upon application to the *Interstate Commerce* Commission (appointed under the provisions of this Act) such common carriers may, in special cases, after investigation (by the Commission) be authorized *by the Commission* to charge less for longer than for shorter distances for the transportation of passengers or property; and the Commission may from time to time prescribe the extent to which such designated common carrier may be relieved from the operation of this section (of this Act): *Provided, further, That no rates or charges lawfully existing at the time of the passage of this amendatory Act shall be required to be changed by reason of the provisions of this section prior to the expiration of six months after the passage of this Act, nor in any case where application shall have been filed before the Commission in accordance with the provisions of this section, until a determination of such application by the Commission.*

"Wherever a carrier by railroad shall, in competition with a water route or routes, reduce the rates on the carriage of any species of freight to or from competitive points, it shall not be permitted to increase such rates unless after hearing by the Interstate Commerce Commission, it shall be found that such proposed increase rests upon changed conditions other than the elimination of water competition."

The features in the Mann-Elkins Amendment were, therefore:

(a) The removal of the phrase "under substantially similar circumstances and conditions", which had been the proximate cause of the different interpretation of the whole clause by the court and the ultimate frustration of the entire provision;

(b) Making the provision applicable also to charges over through routes as well as single lines;

(c) Making a general rule that a through rate should not be greater than the combination of the intermediate rates;

(d) Vesting the Commission with arbitrary and sweeping power in the enforcement of the long and short haul principle, with a view to restoring the power to the Commission that it had prior to the adverse court decisions, whereby carriers might no more judge for themselves and make depressed

rates, but must first apply to the Commission for relief, which would determine in its discretion, not necessarily if the circumstances and conditions were dissimilar, but if the particular facts and conditions constituted special cases;

(e) The prevention of the type of competition which the rail carriers were alleged to have conducted against the water carriers, through absolutely prohibiting the railways to advance their competitive rates solely because of the disappearance of the competition.

In the regulation of the charges under this extended power, the Interstate Commerce Commission first authorized the carriers to file changes in rates, continuing the existing 4th Section departures, provided that the discrimination at intermediate points was not made greater. As regards through charges, the Commission had already made it a rule that those which were higher than the aggregates of the intermediate charges were, prima facie, unreasonable.

In 1911 and later, the Commission made principles as to the measure for the consideration of the violation of the 4th Section of the Act, as follows:

(a) Comparison of Charges.

For the purpose of determining the departure, charges of like kind and character were to be used for comparison, for instance, transshipment charges against transshipment charges;

proportionals against proportionals export and import rates against export and import rates, respectively; excursion fares against excursion fares; commutation fares against commutation fares; and mileage, party and half fares against mileage, party and half fares, respectively.

Consequently, a proportional rate which was lower in amount than a corresponding local rate was not by itself illegal, and an import rate might be lower than a domestic rate without the violation of the 4th Section provision.

(b) Extent of Circuity.

Circuitous line competition might constitute a special case to justify the departure, but in order to avoid unnecessary or excessive and wasteful competition, the extent of circuity was roughly fixed. As discussed before, a circuitous line or route which was longer than its direct rival line or route at least by fifteen per cent might, without prayer for relief, depart from the general rule in respect to passenger transportation. The same ruling was to apply also to freight cases. However, the maximum extent was not specifically fixed in this relation, but it was left to be decided on the merit of each case, to avoid economic waste of transportation.

(c) Potential Water Competition.

The mere probability or possibility of the recurrence of water competition might not constitute a ground for departure.

Potential water competition was consequently dropped out of the categories of considerations. The Commission, for instance, refused the carriers' application for relief in connection with the rates between*New Orleans and Kansas City, where there had been no controlling competition for more than a quarter of a century, the prayer being based upon the potentiality of competition on the River. 44 I. C. C. 727.

(d) Compensatory Character of Charges.

A rate should not be so depressed as it would not be reasonably compensatory, or in other words, any competitive rate must cover more than the out-of-pocket expenses, so that the danger of recouping the loss resulting from unreasonably depressed rates upon the defenseless intermediate rates might be avoided.

(e) Market Competition.

Market competition should not be acceptedwithout qualification as a ground for relief. The Commission attempted to restrict this very potent factor within what was deemed to be a reasonable bound, with a view to avoiding excess and its consequent waste of transportation in which the "unnecessary" cross current of traffic occurred.

In all the investigations which the Commission carried out, it took the most rigid attitude practicable and granted the relief to the least possible degree, acting upon the above-men-

tioned principles. As a result, a greater portion of the basing-point rates in the Southeast had disappeared by 1914. Atlanta, Birmingham and other places which were not actual water-points were excluded from the list of basing points, and rates were adjusted largely on the dryland basis. 30 I. C. C. 153.

However, the Commission had to recognize the powerful force of competition, both transportation and market, upon railway charges. "The Commission itself, although the opportunity had frequently been presented to it, has never endorsed a rigid long and short haul section.....Discriminations must stop, viz. undue discriminations. Preferences and advantages must be put to an end -- those, to be sure, that are undue and unreasonable..... A carrier shall not prefer the more distant point by giving it the lower rate because of any policy of its own initiation, but if at the more distant point it finds a condition to which it must conform under the imperious law of competition, if it would participate in traffic to that point, it may discriminate against the intermediate points without violating the law.....Market competition must be considered as one of those circumstances affecting a rate situation with which we are called upon to deal".

The Commission made a rule that the factor of market competition must be minimized in the consideration of departures, but it had to recognize its force notwithstand, because "market

competition is so involved with rail competition that it is hard to distinguish the two, because the competing markets, although served by different railroads, are still served by railroads, and in order that the productions of the different regions may reach the same market there must be, of course, ordinarily a rail movement, certainly a carrier movement that brings in the element of rail competition as well as market competition.......Of late years we have not regarded market competition, pure and simple, standing by itself, as a significant reason for the granting of the 4th Section relief, and yet there may have been instances where that market competition, combined with the rail and other competition, was found to be a sufficient reason for affording that relief". Commissioner Hall before the Senate Interstate Commerce Committee on the Gooding Bill, February 28, 1924.

The transcontinental rate adjustment furnishes the most interesting instance illustrative of the attitude of the Interstate Commerce Commission with the newly acquired power. Upon the Southern Pacific and the Union Pacific reaching the Western seaboard in the '70's, competition between the railways, between the railways and inter-coastal water carriers, and also between the Eastern and Middle Western markets, for Western business became very acute, as discussed in the preceding section, and the

result of the situation was naturally the very wide blanketing of the eastern portion of the country, the zone reaching as far as Omaha and even Denver. The Commission started extensive investigations and attempted to confine the influence of the competition within the transportation conditions, which it considered were entirely beyond the railways' control. They resulted, in 1911, in the division of the country into five zones, for the purpose of fixing the extent of the departure from the provision of the 4th Section. The function of determing dissimilarity in circumstances and conditions had been shifted to the Commission from the carriers as a result of the Mann-Elkins Act. 234 U. S. 476; 234 U. S. 495.

The order of the Commission was tried in the courts, and the final decision was rendered in 1914 in favor of the Commission, but conditions had by this time greatly changed with the opening of the Panama Canal. Consequently, the original order was modified, so that the commodities were grouped into three different classes, according to the degree of susceptibility to the water competition, and relief was granted, accordingly, to different extents, which the Commission deemed the competitive forces justified. The terminals at which rates might be depressed were specified, and maxima were designated for the intermediate rates to be charged in violation of the 4th Section.

32 I. C. C. 611; 34 I. C. C. 13. For eastbound traffic, the zones were not so extensive as for westbound traffic, on account of the smaller volume of business and lesser competition. 33 I. C. C. 480.

In 1915, when the Panama Canal, which had been blocked shortly after it was opened, was reopened to traffic, the steamers had largely diverted to the more lucrative trans-Atlantic business. On the complaint of the Intermountain Territory, the Commission again conducted investigations, and upon finding that the water competition was negligible, it ordered the railways to change their rate systems and adhere strictly to the requirements of the long and short haul clause. 48 I. C. C. 79.

Thereupon, the railways raised their depressed terminal rates, on the whole, rather than reduce the higher intermediate rates, which resulted in fresh complaints from the terminal districts against the alleged violation of the provision in Section 4 in raising the rates because of the mere disappearance of the water competition. A part of the rates were accordingly readjusted. Later, in 1921, the Intermountain Territory again lodged complaints against the unreasonableness supposed to exist in the rates, which had been fixed on the same level as for the more distant terminals. The contention was that insomuch as it was located nearer to the eastern

markets, it should be entitled to lower rates than the coast districts, but the Commission refused to act upon the complaints, in the anticipation of the probability of water competition to resume its former severity in the near future. 61 I. C. C. 226.

As regards the court attitude toward the 4th Section of the Act as amended, the most interesting decisions were those passed upon the transcontinental rate cases. Immediately after the original order was made in 1911 by the Interstate Commerce Commission to adjust the transcontinental rate structure, the case was brought by the carriers to the Commerce Court, which in 1914 rendered its decision. It completely upset the Commission's order, on two grounds. It held, first that the Commission had no power to distinguish between water competition and market competition. The Commission should have taken into consideration the force of market competition as much as water competition. Competition of any kind, for which the carriers were not responsible, should constitute a sufficient ground for the justification of the departure from the general rule of the 4th Section. Secondly, the Commission had transcended its power in fixing the differentials to be added to the terminal rates to maintain proportional relationships between the terminal lower rates and the intermediate higherrates, such as those from

Spokane and Walla Walla, Washington, so long as those intermediate rates were per se reasonable and just. 191 Fed. 856; 234 U. S. 476. The whole attitude of the Commerce Court was quite antagonistic to the Commission, but it seems to have believed in the social and economic justice of the laissez-faire policy in the matter of railway charges.

The Commission, however, appealed to the Supreme Court which reversed the decision of the Commerce Court and affirmed the order of the Commission in its entirety, on the ground that, as the result of the removal in 1910 of the phrase "under substantially similar circumstances and conditions" from the 4th Section, the Commission had been given an absolute power to consider the competitive conditions entirely at its own discretion, the function of determining as to special cases having been shifted from the carriers to the Commission. As regards market competition, however, the Supreme Court held that it "lawfully resulted that the lesser rate was charged for a longer than was exacted for a shorter haul"; on account of transportation competition, "such exaction being authorized, could not be a preference or discrimination and therefore illegal......It came to be settled that where competitive conditions authorized the carriers to lower their rates to a particular place, the right to meet the competition by lowering rates to such place was not confined to

shipments made from the point or origin of the competition, but empowered all carriers in the interest of freedom of commerce and to afford enlarged opportunity to shippers to accept, if they chose to do so, shipments to such competitive points at lower rates than their general tariff rates, a right which came aptly to be described as 'market competition', because the practice served to enlarge markets and develop the freedom of tariff and intercourse". 234 U. S. 476; 234 U. S. 495; 249 U. S. 557.

As said before, some of the Pacific terminal rates were raised in 1918 to conform to the long and short haul requirements of Section 4, as a result of the deviation of most of the steamships from the Panama Canal to the Atlantic service. Thereupon, a Seattle corporation protested against the coast rates having been advanced simply because of the disappearance of the Panama competition. In this case, the Supreme Court took a very broad view in the interpretation of the amended clause, and held that the rates, which had been depressed by the force of the water competition, might justifiably be raised when the competitive condition disappeared. There should be no valid reason why depressed rates should continue even after the economic factor, which had forced the depression, ceased to

operate. If legitimate and healthy competition was to be preserved and encouraged, the existence and disappearance of competitive conditions should be made a prime factor in the adjustment of rates, and, therefore, an inflexible principle would destroy the natural operation of the competitive factor in the making of proper rates.

On the whole, insomuch as the only way in which the carriers could obtain relief from the 4th Section was by application to the Commission after the amendment of 1910, the Commission seemed to deem it proper and consonant with what had, for twenty-three years after the original enactment of the Act to Regulate Interstate Commerce, been the usage obtaining in the transportation world, to afford the carriers opportunities to file applications for relief, and more than five thousand such applications were made within the six months ending February 17th, 1911, Some of them were very extensive, others were of local nature, and they covered practically every mile of railroad in the country. Some of them, above three hundred in number, were for relief in respect to passenger traffic, and they were for the most part disposed of within the period of a year. There is very little need for relief in the case of passenger fares, first, because the amount of fares paid is not so important a consideration as the speed and comfort in the service, and secondly, because, if a rate to a more distant point is lower than to a

passenger's destination, he can buy a ticket for the more distant point and get off at his point of destination. However, the situation will be a little more complicated on account of the provision that a through fare should not exceed the aggregate of the intermediates. There may be a situation where a railway company calls for relief, when from an initial point A to a common point B one route is considerably longer than the other. The passenger fares, as distinguished from the freight rates, being determined on the per-mile basis, it is plain that the shorter route to B will fix the rate based on 2, 2.5, 3 or 3.6 cents per mile, as the case may be; and if the circuitous route desires to participate in the traffic to B, it will have to maintain the same rate as the shorter route. The question is whether, on the traffic moving beyond B, the circuitous route will absorb its regular mileage rate all the way, or whether it will absorb its mileage rate from B on, and add thereto the reduced rate from A to B, which is intermediate to the farther destination referred to. However, all these questions have been cleared up, and there seems to be no 4th Section relief in respect thereto.

3. 1920

Section 4 of the Act to Regulate Interstate Commerce was further amended through the passage of the Transportation Act of 1920, but this amendment did not introduce any new princi-

ple into the provision. It did no more than to put into a statutory form the rules of procedure, upon which the Interstate Commerce Commission had repeatedly acted in particular cases.

The 4th Section, as it now is, reads :

"(1) That it shall be unlawful for any common carrier subject to the provisions of this Act to charge or receive a greater compensation in the aggregate for the transportation of passengers or a like kind of property for a shorter than for a longer distance, over the same line or route, in the same direction, the shorter being included within the longer distance, or to charge any greater compensation as a through rate than the aggregate of the intermediate rates subject to the provisions of this Act, but this shall not be construed as authorizing any common carrier within the terms of this Act to charge or receive as great compensation for a shorter as for a longer distance; Provided, however, That upon application to the (Interstate Commerce) Commission such common carrier may, in special cases, after investigation, be authorized by the Commission to charge less for longer than for shorter distances for the transportation of passengers or property, and the Commissionmay from time to time prescribe the extent to which such designated common carrier may be relieved from the operation of this sectipn; but in exercising the authority conferred upon it under this proviso, the Commission shall not permit the establishment of any charge to or

from the more distant point that is not reasonably compensatory for the service performed; and if a circuitous rail line or route is, because of such circuity, granted authority to meet the charges of a more direct line or route to or from competitive points and to maintain higher charges to or from intermediate points on its line, the authority shall not include intermediate points as to which the haul of the petitioning line or route is not longer than that of the direct line or route between the competitive points; and no such authorization shall be granted on account of merely potential water competition not actually in existence: *And* provided, further, That (no) rates, *fares,* orcharges (lawfully) existing at the time of the passage of this amendator Act *by virtue of orders of the Commission or as to which application has therefore been filed with the Commission and not yet acted upon,* shall *not* be required to be changed by reason of the provisions of this section (prior to the expiration of six months after the passage of this Act, nor in any case where application shall have been made before the Commission in accordance with the provisions of this section, until a determination of such application by the Commission) *until the further order of or determination by the Commission.*

"(2) (Whenever) *Wherever* a carrier by railroad shall, in competition with a water route or routes, reduce the rates on the carriage of any species of freight to or from competitive

points, it shall not be permitted to increase such rates unless after hearing by the (Interstate Commerce) Commission it shall be found that such proposed increase rests upon changed conditions other than the elimination of water competition".

The features of the amendment of 1920 were as follows:

(a) Compensatory Character of Competitive Rates.

A charge to or from a more distant point must, under any conditions, be reasonably compensatory. As said before, this principle had already been in actual practice for several years, and the incorporation thereof into the Act served only to strengthen the position of the Commission in this respect. Consequently, it has thereby been definitely decided that a carrier must first of all satisfy the Commission that a rate proposed to be depressed at a competitive point is reasonably compensatory, so that the loss that might otherwise result may not affect the reasonableness of the intermediate rates.

(b) Equi-distance Principle.

In the case of a charge in which a circuitous rail line or route may make to meet competition with a direct line or route, the charge to such an intermediate point on the circuitous line or route, as is at no greater distance from the point of common origin than the length of the direct line or route, must not be higher, under any circumstances, than the

direct line or route is charging. This rule is another step towards the application of uniform distance rates on different lines within a given territory. The extent to which the circuity of routes was recognized as a justifiable basis for violation, had, as discussed before, been determined by the Commission shortly after 1910.

(c) Potentiality of Water Competition.

Relief must not be granted on thr ground of the probability or possibility of the recurrence of water competition. This principle had also been in application for the past several years, and the carriers(pleas of potential water competition had fallen on deaf ears of the Commission, as explained in the previous section.

As regards the interpretation of the phrase "reasonably compensatory" in connection with the requirement of legal competitive rates, "it was very easy to write and very difficult to interpret". The Congress intended, vaguely apparently, that any depressed rate must cover the cost of maintenance and operation plus a just share of the return upon the capital, as distinguished from the out-of-pocket rate. This is, of course, quite unreasonable, and the Interstate Commerce Commission has adopted the out-of-pocket cost basis as the test for the legality of such rates, that is, a reasonably compensatory competitive rate is that which, theoretically at least,

will enable the railway company charging it to defray the cost of maintenance and operation, and which will also bear something, however small it may be, for the contribution towards the joint cost. "Reasonably compensatory" must be construed on a different basis from "just and reasonable" as used in (5) of Section 1 of the Act, or else the long and short haul clause would automatically become absolute, for if a competitive rate should be expected to be, per se, "just and reasonable", any intermediate rate that is higher than the competitive rate would become a rate that is more than "just and reasonable", in violation of the section above referred to. If, however, the phrase "just and reasonable" is construed to mean "not more nor less than the traffic is economically willing to pay", there will be no question at all.

In the actual application, the Commission has had necessarily to adopt the out-of-pocket cost principle, because :

"It could with propriety be said that if the net returns of that carrier, hauling goods at that reduced rate to that port, was larger than it would be without the goods shipped to that port, whether that extra freight traffic with which it was filling its empty cars and so on was, under the circumstances, reasonably compensatory......It was carrying none before....It is carrying some now.....and the result of its carrying some is to add something to its revenue..... If, as the net result of

getting the additional traffic at the lower rate, the carrier has an increased net revenue, then it may be said that the additional traffic has been reasonably compensatory under the circumstances". Sic. Commissioner Hall, before the Senate Interstate Commerce Committee, on the Gooding Bill, February 28, 1924.

4. Gooding Bill.

The traditional antagonism of the agragrian interests in the West was aggravated by the continued deflation following the war boom, and the situation culminated in the Hoch-Smith Resolution and the Gooding Bill. The former was, in effect, to satisfy those interests at the expense of the railways, in the form of the investigation of the whole rate structures with a view to adjusting the rates on agricultural products to enable them to move freely, and the latter was to fetter the Interstate Commerce Commission and the railways still more rigidly in their function.

The Gooding Bill, to amend Section 4 of the Act to Regulate Interstate Commerce, was produced originally to the Sixty-Eighth Congress in 1923-1924, but it was defeated on the floor. The same bill was again submitted to the present Congress, and there seems to have been little hope brought of passage.

The bill reads as follows :

"Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, That Paragraph (1) of Section 4 of the Interstate Commerce Act, as amended, is amended to read as follows :

"(1) That it shall be unlawful for any common carrier subject to the provisions of this Act to charge or receive any greater compensation in the aggregate for the transportation of passengers, or of a like kind of property, for a shorter than for a longer distance over the same line or route, in the same direction, the shorter being included within the longer distance, or to charge any greater compensation as a through rate than the aggregate of the intermediate rates subject to the provisions of this Act, but this shall not be construed as authorizing any common carrier within the terms of this Act to charge or receive as great compensation fora shorter as for a longer distance: Provided, That upon application to the Commission a (such) common carrier by rail may (in special cases) after public hearing, (investigation) be authorized by the Commission to charge less for longer than for shorter distances for the transportation of passengers or property only in a case where the route via the applicant rail carrier or rail carriers is longer than via the route of some other rail carrier or rail carriers between the same points;

(and the Commission may from time to time prescribe the extent to which such designated common carrier may be relieved from the operation of this section;) but in exercising the authority conferred upon it in this proviso the Commission shall not permit the establishment of any charge to or from the more distant point that is not reasonably compensatory for the service performed; and if a circuitous rail line or route is (because of such circuity) granted authority to meet the charges of a more direct rail line or rail route to or from competitive points and to maintain higher charges to or from intermediate points on its line, the authority shall not include intermediate points as to which the haul of the petitioning line or route is not longer than that of the direct line or route between the competitive points; Provided, further, That the Commission may, with or without hearing, upon its own motion or upon application of carriers or shippers, in cases of emergency, such as drought or disaster, authorize during the continuance of said emergency any common carrier or carriers to charge or receive a greater compensation for a shorter than for a longer distance: Provided, further That after six months following the passage of this amendatory Act, no common carrier shall charge less for longer than for shorter distances for the transportation of passengers or property, except by authority of an

of an order of the Commission entered in compliance with the provisions of this amended Act. (And no such authorization shall be granted on account of merely potential water competition not actually in existence: And provided, further, That rates, fares, or charges existing at the time of the passage of this amendatory Act by virtue of orders of the Commission or as to which application has theretofore been filed with the Commission and not yet acted upon, shall not be required to be changed by reason of the provisions of this section until the further order of or a determination by the Commission).

"(2) Whenever (Wherever) a carrier by railroad shall in competition with a water route or routes reduce the rates on the carriage of any species of freight to or from competitive points it shall not be permitted to increase such rates unless after a hearing by the Commission it shall be found that such proposed increase rests upon changed conditions other than the elimination of water competition".

The direct effects of the amendment would be briefly as follows :

(a) The exclusion from the operation of the proviso the carriers of passengers or property party by rail and partly by water when both are used under a common control, management, or arrangement for a continuous carriage or shipment, and also the pipe lines, express companies, and sleeping-car companies.

Consequently, the prohibition of the 4th Section would become inflexible and absolute to all the common carriers except the common carriers wholly by rail. This would prove a fundamental change in what has been for the past 39 years the policy as declared in the 4th Section. The rate situation would be completely upset on the differential rates and rail lines in New England; from New York and other North Atlantic ports to interior destinations in the South via Baltimore or South Atlantic ports; from New York to San Francisco via Galveston, to cite a few out of the many.

The pipe lines and sleeping-car companies may need no relief, but the express companies are in imperative need thereof, so long as the zone and block system of making express rates remains in operation, in which an express rate from one block or sub-block to another is the same on whatever route. One or more out of several routes from the same origin to the destination may be so located that a train carrying the express matter will move through a higher-rated block or sub-block on its way to the common destination, the direct route having possibly only one passenger train a day each way, while the circuitous route may have five or ten passenger trains each way daily. The rigid rule would probably result in discarding largely the block system throughout the

country, which has proved highly satisfactory to shippers as well as the express carriers.

(b) The omission of "in special cases" would have no effect.

(c) The substitution of "public hearing" for "investigation".

Under the original and the supplemental Acts, the holding of a public hearing has never been made a prerequisite of the exercise by the Commission of the power and duties conferred upon it in the administration of the 4th Section, although a hearing has never been denied when it was sought by any party interested.

There has grown up a usage of according without hearing what is termed temporary relief in situations analogous and closely allied to those covered by original applications. To arrest all changes in rates and charges until hearing can be had would be of immeasurable detriment to the producers and shippers, by restricting and obstructing the free flow of commerce throughout country.

No permanent relief has ever been granted upon the original application except after hearing. Permanent relief, however, has generally been granted or denied without a hearing where circuitous lines sought authority to meet short-line competition, and

all the facts as to the degree of circuity, the rates involved, and other essential matters were presented with or after the application. Most of such applications can now be disposed of in a few days, but if hearings were required much time would elapse before final action could be taken on them, and interfere with other matters requiring the immediate attention of the Commission. Moreover, the expense to the interested carriers and to the Commission would be unnecessarily increased.

In brief, it is far better to allow the Commission to continue to exercise its greatest judgment in such a way as to discharge its duty under Section 13 of the Act to "investigate the matters complained of in such a manner and by such means as it shall deem proper", and the rigid and inflexible requirement of a public hearing in every case before relief can be granted is no doubt not in the public interest.

(d) The taking up of the power to prescribe the extent of relief that has been granted, and the limitation of departure to rail line competition. It would wipe out the statutory provisions which have been sustained by the Supreme Court as not only constitutional but within the powers delegated to the Commission, in harmony with the other provisions of the Act, and apt for the purpose of carrying the Act into effect. (234 U. S. 476;

234 U. S. 496).

Relief has heretofore been granted carriers within the following general situations:

(1) Where a circuitous line or route is in competition with a shorter line or route, with certain limitations.

(2) Where rail lines are in competition with water lines. For example, relief has been granted the rail lines operating between San Francisco and Portland.

(3) To meet commercial and market competition. However, relief has been granted in a restricted case where the line or route seeking relief was at a substantial disadvantage as compared with the lines or routes serving competitive points or sections of production. The adequacy of market competition to support 4th-Section relief has been fully recognized by the Supreme Court. (234 U. S. 476). Controlling competition of any kind must be a factor to be considered. In substance, the amendment of 1910 intrinsically states no new rule or principle, but simply has taken from the carriers the deposit of public power previously lodged in them and vested it in the Commission as a primary instead of a reviewing function.

(4) To carriers in poor financial circumstances, whose cost of operation due to the conditions over which they have no control is unusually high, to meet competition of stronger lines,

whose traffic, operating, and financial conditions are more favorable and which, therefore, are able to maintain a lower basis of rates. Thus, the Tenessee Central has been granted relief in competition with the stronger Louisville and Nashville. Such weak lines exist in almost every state in the Union, particularly throughout the South, as, for instance, the Georgia, Florida and Alabama; the Gulf and Ship Island; the Kansas City, Mexico and Orient; and the Missouri and North Arkansas.

If no 4th-Section relief could be granted to enable them to meet the rates of standard lines between competitive points and maintain higher rates to and from points on their own lines, they would lose such competitive traffic as they now have, and many of them would no doubt be forced to suspend operation, with consequent great loss to the towns and farming communities served by them. The result to so many short lines in various sections of the country would probably be disastrous, if they were prohibited from applying higher rates to intermediate points than to more distant points except where there routes are circuitous.

(5) To carriers operating under disadvantages due to conditions other than circuity, as, for example, where carriers forming a joint route are in competition with a carrier having a single haul between competitive points. In such case, there is frequently an extra expense incurred by joint line route in

transferring traffic from one to another, and relief has been granted to offset this condition. In many instances, as in the case of the single-line rates prescribed for general application insouthern Missouri, Arkansas and western Louisiana (77 I. C. C. 473), joint lines are accorded joint-line differentials. In such cases, the joint lines have been granted relief to meet the rates of single lines and to maintain higher rates at the intermediate points, provided that such rates do not exceed rates based on the distance mileage scale plus the joint-line differentials found to be reasonable. Besides, there are certain differential rail-and-water routes in competition with all-rail routes, which make rates between competitive points somewhat lower than those established by the all-rail routes.

(6) To meet emergency situations due to drought, flood, and other abnormal conditions. For example, during the summer and fall of 1922 there was a serious drought in New Mexico and other southwestern States, which resulted in such a widespread destruction of the crops that livestock in that section was threatened with starvation. The carriers agreed to establish rates on food products shipped into these States on a basis generally not in excess of 50 per cent of the normal rates, provided that they were not required to reduce their normal rates to the intermediate points not affected by the drought con-

ditions. Upon application, relief was granted for a temporary period. Relief has also been granted temporarily for the purpose of relieving congestion. For example, during the fall and winter of 1922-1923 a serious congestion obtained on the lines of many of the eastern carriers and in New England, and there was considerable delay and difficulty in handling traffic over these lines, particularly cotton from Memphis, Tennessee, for the mills in New England. Upon application for relief, the carriers interested were permitted to depart from the 4th-Section provision, so that rates might be made to direct the movement through the port of New Orleans.

(7) To meet competition. Relief has been granted to the carriers operating between the Central Freight Association territory and the South Atlantic and Gulf ports, so that they may have rates, applicable on export traffic from the central territory to the South Atlantic and Gulf ports, established to equalize those in effect on like traffic from the same territory to New York. Similar rates are now in effect from the South Atlantic and Gulf ports to the central territory applicable on import traffic.

The rates from the northern and eastern portions of the central territory to New York are lower than the rates from points on the Ohio River to New York. The application of the New York rates from points in this territory on export traffic to the

southern ports, therefore, results in lower rates from the northern and eastern points in the central territory, such as Cleveland, Ohio, than from the Ohio River cities, such as Cincinnati, and the routes from Cleveland to the southern ports are operated through Cincinnati, the higher-rated point.

Prohibition of relief to enable the South Atlantic and Gulf ports to meet the competition of the North Atlantic ports would no doubt seriously hamper the former and lessen their export and import traffic.

(e) The omission of "because of circuity".

The phrase is omitted because there would be no departure allowed except on the grounds of circuity.

(f) The omission of the provision regarding potential water competition.

This is merely an interim provision inserted in 1920, and the omission thereof would not have any material effect upon the present situation.

(g) The provision of emergency relief.

This provision would embrace all common carriers by rail and otherwise, and, insofar as emergencies are concerned, it would add nothing to what has already been within the power of the Commission, for it was practiced repeatedly in recent years. However, the amendment would limit the cases of emergencies to "such as drought or disaster", and leave out the

cases of traffic congestion, and the many and varied other kinds of emergency which may properly call for the remedial power by the Commission in the interest of producers, shippers, and consumers, quite as much as in the interest of the carriers.

(h) The submission of all the departures to the fresh approval of the Commission.

It would prove absolutely impossible for the Commission with the limited men and money to hold the required public hearings within the six months. The result would be that every carrier must bring its rate structure into strict conformity with the 4th Section at the peril of incurring prosecution and the penalties provided for by Section 10 of the Act to Regulate Interstate Commerce. If it attempted to do this by increasing all rates to more distant points, so as to clear the intermediate rates, numberless protests from shippers must be anticipated, with the inevitable result that many of the tariffs would have to be suspended by the Commission under Section 15 of the Act. The Commission's power of suspension is limited to a maximum period of 150 days, and as it is utterly impossible within that brief time to dispose of the enormous number of suspension cases, many increased rates would necessarily become effective.

Apart from the considerable embarrassment to which the Commission would be put, both the carriers and the public would

greatly suffer from the enactment of the Gooding Bill. No relief could be granted except to all-rail carriers competing between the same points, and then only on the grounds of circuity. Distance is but one of the transportation obstacles that must be overcome in serving the public. Relief would be confined to a considation of distance by rail between the same points. An applicant rail carrier is assumed in the Bill to have only one route and another rail carrier ishas only another route. As a matter of fact, however, the applicant has generally several of these routes and participates in many of them under any agency tariff. Some of these routes may be longer and others shorter than some of the other routes. Under the proposed provision, how could applications be dealt with in the case of such multiplicity of routes except upon the basis of distance alone?

It has long been a general practice in this country to establish rates on a group or zone system. This is the system which is now employed in publishing the rates between the eastern points and the Pacific Coast. The territory lying generally east of the Rocky Mountains is divided into several large groups, and the rates from all the points in each of the groups are generally the same to all the points in California. A similar plan is

followed in publishing the rates between the Central Territory and the Trunk Line and New England territories. This method of rate-making is not only simple and convenient, but is of great advantage to the public at large, where it is desirable to maintain the producers of the same territory on a substantial equality in marketing their products, and also to diffuse industry and population within the groups. Many of these groups cannot be preserved without 4th-Section relief.

The Bill disregards entirely the commercial and industrial conditions that have led to the establishment of these groups. It would become impossible to conserve the equality of rates over all reasonable routes which now prevail. There can be no doubt that the general practice of extending the blanket rate to and from all the points within a given group, as in the case of Chicago, has been instrumental in spreading the zone of industrial and commercial activity within the group. It is undoubtedly the truth that, if these groups were required to be split up, and rates made solely with relation to distance, there would result a greater concentration of industries at points having the most favorable location, quite contrary to the expectation of the proponents of the distance principle. Moreover, this would add to the congestion at these points, which is already a matter of serious concern.

The carriers partly by rail and partly by water and the express companies would be entirely denied relief from the long and short haul rule. The competition encountered at destination from all-water routes, as, for example, through the Panama Canal, and market competition, which has been recognized by the Supreme Court as valid ground for relief, would be excluded.

Such a radical revision as this upon the business of the country would undoubtedly cause general unsettlement. Every industry in the country would be caught in the turmoil, and the relationships of rates, a vitally important consideration to all producers, manufacturers and other shippers, would be thrown into such confusion and uncertainty as to arrest the commerce of the United States, both foreign and domestic. During the year of 1924 the country's commerce aggregated more than 50,000,000 carloads.

Further, if it is still the purpose of the nation to promote, foster, and develop the free flow of commerce among the States and with foreign nations, and to provide the people with adequate transportation, then it must be recognized that this proposed proviso, taken by itself and in connection with the other new provisions of the Bill, is thoroughly incompatible with the said purpose and must destroy it.

Besides it would be unfair to the railways, because it would result in according the water carriers undue preference at the expense of the railways. They would be fettered completely by legislation, while for the benefit of the water carriers, which are the most powerful rivals of the former, a vast sum of national money has been being expended in the improvement of the water-ways, port facilities, etc., and in the maintenance and operation of the fleet. In addition, they are almost scott-free from the regulation of their rates and services in respect to competition. The same thing may be said of the motor carriers. If rail, water and highway transportation is to be maintained and developed side by side, and legitimate and healthy competition is to be conserved, in the interest of the industry, commerce, welfare and safety of the nation, all the carriers must be accorded free play and equal opportunity. The railways have already been pulled down to a considerable disadvantage as compared with the other carriers, and they are consequently in jeopardy. The effect of any attempt on the part of the public further to interfere with the railway charges would be suicidal and revolutionary, not only to the carriers but also to the shippers and the communities. Nothing would be more destructive and disastrous, from the economic point of view, than the provisions proposed in the Gooding Bill.

If ever they are enacted, it will mark the ruin of the railways and indistries.

VII. CONCLUSION.

The problem as to how distance rates are to be constructed and how they are to be applied is not a matter of principle, but depends for its solution entirely upon the policy which requires the adoption thereof.

The distance principle is supported upon the basis that railway charges, if they are just and reasonable, should be made by reference to the cost of service involved in the transportation of each particular description of diverse traffic, which is variable with the distance of haul in some definite proportion under any circumstances and conditions, or that they should be determined in accordance with the amount of service rendered, which is measurable, only by the length of service. If, therefore, the above basis fails to be confirmed on facts and theories, the distance principle will be untenable from the economic point of view, both in respect to its validity and desirability.

In the first place, the cost of service is not ascertainable with any approach to accuracy and precision for a unit of traffic and a unit of distance, not because of a railway cost accounting method having not as yet been developed, but because of the very nature and character of the cost itself. The fact that it is composed of the joint and additional elements, and that the joint element constitutes approximately two-thirds of the total

expenditure, defies any attempt to apportion it to each unit of service. Moreover, if it were allocatable, the cost per unit clearly does not remain constant, because the total cost is composed of the constant and variable elements, and the former occupies about two-thirds of the whole expenditures.

Further, assuming that the cost per unit could be determined as a basis for making equitable rates and charges, undoubtedly it would have no practical relationship to the length of the haul. As long as the economic law of diminishing cost operates, cost varies primarily with the availability of the handling and carrying capacity. It is true that the cost incurred in connection with the rendering of particular services does vary with the distance of haul, but it must be noted that this rule applies only to very limited cases of extraordinary nature. For instance, where the destination of a shipment is changed, while in transit, to a more distant point, the cost of service certainly increases as the distance grows. It increases relatively with the increase in length, only when the service is rendered exactly under the same circumstances and conditions. As a matter of fact, however, each shipment is handled and moved under different conditions, and therefore, the rule that cost varies with distance is not available for rate-making purposes.

Cost not only is unascertainable per unit of the

service to be performed, but it has little definite relationship to the distance of carriage, and therefore, the cost basis can never satisfactorily support the validity of the distance principle.

In the second place, the distance principle may be advanced on the basis of the amount of service rendered, as measured by the length of haul. It may appear to be a highly satisfactory theory that, insomuch as the service performed in the haul over 100 miles is twice as much as the service for 50 miles, the just and reasonable rate for the former, that a carrier may charge on the particular traffic, ought to be about, if not exactly, twice the amount for the latter.

If, however, the equitableness and reasonableness of railway charges are to be tested on the economic justifiability, and if the economic benefit is to be considered as identical with the best interest of the communities, the advisability of the distance principle cannot be defended.

Railways depend for their ability to supply adequate service to meet the growing demand of the public upon whether they obtain a sufficient revenue from the operation, and if they are to be allowed to get a legitimate revenue, the revenue ought to be made up of the following three types of rates :

1. Rates that are so low as to cover hardly more than the out-of-pocket expenses, in the case of the low-grade,

long-distance, or highly competitive traffic, which has a potentiality of future development under a lower rate; which is unwilling to pay a higher rate for free movement; or which is securable by the railway to fill up the unused capacity of its facilities if a lower rate is given.

2. Rates that cover both the out-of-pocket expenses and a proportionate part of the unapportionable cost, in the case of medium-class traffic.

3. Rates that, after covering that traffic's own out-of-pocket expenses, leave a large and disproportionate surplus available as a contribution toward the unapportioned expenses of the lower-class, long-distance, or competitive traffic, which said traffic itself is not willing to pay, in the case of high-class, short-distance, or non-competitive traffic.

The above may be a very abstract principle, and there is certainly considerable difficulty in the actual application thereof, for cost is not accurately ascertainable for each unit of traffic, and in addition, revenue cannot be adjusted to cost, but, instead, cost must be adjusted to revenue in the railway undertaking, at least from the theoretical standpoint, just as in any other commercial enterprise which is subject to competitive influence.

However, this fundamental principle of making rates upon the willingness of traffic to pay, with reference to ability

of traffic to pay, to determine the maximum is not at all economically unjust, in spite of the rate structure developed thereon necessarily appearing highly irregular and inconsistent; on the contrary, "it is the best for the country, because it will enlarge commerce and extend communication; it is the best for the railroad, because it will build up a large business; and finally, it is fair to property owners, because it will make them pay in some proportion to the benefit received, as explained by Judge Cooley. (1 I. C. C.)

"In commercial affairs generally, and not in railway service only, prices are based, not on cost to the producer, but on value to the consumer; subject to this, that the lowest price cannot in the long run go below the special cost of the article sold or service rendered, and that all the prices in the long run must cover all the costs, general as well as special, of all the articles or services". Acworth: Railway Economics.

However, it may be contended that a railway is not a mere store or a factory, not a railway manager an ordinary trader. A railway is by its nature a public or quasi-public undertaking; it is to some extent, at least, a monopoly. The method which is perfectly justifiable in the case of amanufacturer or a storekeeper is not always justifiable in the case of a railway. This

objection may be a fair one, and therefore, railway charges may be brought under public regulation. But it must be remembered that this is a matter of policy, not a matter of principle -- a policy designed to counteract the relentless economic law.

Clearly the principle of the ability and willingness of traffic to pay represents a principle, not of extortion, but of moderation. To charge what the traffic is willing to pay is, in other words, not to charge what the traffic is not only unable but unwilling to bear. Unfortunately, however, this phrase is generally understood very differently. It has been often asserted that a railway claims, on the strength of this principle, to estimate for itself the production cost at A and the selling price at B, and to appropriate as railway rate the entire difference, and that this principle is invented by a railway to "faites payer au trafic tout ce qu'il peu payer". The truth is, however, that no railway administration, wherever it was free from outside pressure, has ever acted on such suicidal grounds. On the contrary, railway rates have, on the whole, been developed according as the traffic was able and willing to pay. Another objection is that railways often quote low rates at competitive points and impose heavier burdens upon defenseless local traffic, under cover of this principle. A moment's reflection will convince one of fallacy of this statement. They cannot obtain the competitive traffic at all unless they do not make rates according to what it

is willing to bear. Unless carried at an actual loss, it does the local traffic no harm. They must take business from competitive points at competitive rates, and, if it cannot charge intermediate traffic proportionately more, it must often go to bankruptcy. Whatever is received from the competitive traffic above the out-of-pocket cost is extra, and goes that far toward the benefit of the local traffic through the ultimate reduction in the rates thereon.

Particular emphasis must be laid on the fact that, theoretically, the best railway charges can be made only on the basis of the ability and willingness of the traffic to pay, and that the sound and practicable principle of rate-making is that, somewhere between the superior limit of what any particular traffic is able and willing to pay, and the inferior limit of what the railway can afford to carry it for, railway charges are fixed for the different categories of traffic, neither directly or primarily according to the estimated cost of service, nor to the amount of the service perfomred as measured by the length of haul, but fundamentally, though roughly, on the basis of equity of sacrifice by the payer.

Railways turn aside from this econômic system of rate-making and adopt the distance principle, only under the influence of abstract theorists, or under political pressure to remove com-

plaints of all discrimination. Undoubtedly, simplicity and regularity of tariffs are desirable, but as long as the actual economic conditions remain complex and irregular, economic rates must be accordingly complex and irregular.

In Germany, at one time, theorists got the upper hand of the situation, and the result was that the railways had to adopt the distance system. For practical purposes, however, they have long since reverted to the economic system, though the form of their tariffs may still sometimes lead casual observers to imagine that their rates are based on distance.

In Japan, an entirely economic rate system prevailed from the advent of the railway transportation up to some fifteen years ago, when the Railway Nationalization Law was enacted, providing for the ownership and operation by the Government of all the trunk lines, the local transportation to be left for private enterprise. Soon after nationization was completed, the thorough re-organization of the diverse rate structures was started with a view to the introduction of uniformity and consistency, the final result being the uniform application of apparently theoretical distance tapering rates and fares throughout the entire system. However, up to the outbreak ofthe European War, exceptions in the form of specific rates were provided so numerously, to help the infant industries, to fill up the surplus capacities, and to meet active coastwise competition, that the systematic tariffs re-

mained almost in name only, in respect to the more important freight traffic.

Economic rates always and necessarily appear irregular and inconsistent, because they are not based on distance, but, nevertheless, they are at once in the interest of the railway, because even the lowest-class, long-distance traffic, by whatever small amount its rate exceed the additional cost of doing business, contributes to the joint expenses of the undertaking; in the interest of the public, because tariff is thereby made possible, which could not come into existence at all, if each item of traffic were required to pay not only its own direct expenses but its full share of all the standing charges, in accordance with the distance of haul; and in the interest of the high-class, short-distance traffic, because everything which the low-class, long-distance traffic pays beyond its own actual out-of-pocket cost helps to defray the general expenses of the undertaking, which otherwise the high-class, short-distance traffic would have to bear unaided. Any departure from this principle of rate-making is a matter of policy, and does not permit of a scientific explanation.

The principle of charging according as the traffic is able and willing to bear is the best system, which --- the point must be reiterated -- has always been, is, and as long as the best interest of the industry and commerce of a country is to be served on purely economic bases, must always be, adoptedon

any railway, whether it is a State enterprise or private undertaking. What appears on the face of it to be the disadvantage or evil of the principle comes of the disregard of the economic aspect of railway charges.

The strict cost or distance basis is untenable as principle, because it is impracticable and unscientific, but it may be adopted as a matter of policy to counteract the economic force, with or without limitations, according as particular situations demand. If complaints of discriminations, which never fail to follow a rate adjustment, as long as the economic system of rate-making is in practice, are to be avoided entirely, a distance scale must be applied throughout, without deference to the important economic factors affecting rate-making processes. No commodity rate, no specific rate, no classification exception, must be allowed. Furthermore, if the problem of the concentration of industry and population, which may breed social and political evils, is to be solved by the regulation of railway charges, the rigid application of distance rates and fares may serve the purpose to some extent, although, in point of fact, the group system often tends to diffuse industries and population evenly within the groups, and the distance system tends to concentrate them at points advantageous in the matter of distance. On the other hand, if the policy is to alleviate complaints to some extent, and at the same time conserve the naturally developed

trade conditions, with reasonable regard for the needs of the carriers, a scale of distance rates must be constructed on the basis of the prevailing conditions, such as the scale with specific rates proposed by the railways in the South in connection with the recent class-rate investigation, so that the structure may have the look of a rate system which satisfies the current concept of justice. In other words, a rate system must be devised on the basis of a compromise between the general idea that equality is equity and the requirements of the economic force. Exceptional rates must be amply provided for competitive, low-grade, or long-distance traffic; points of economic importance must be grouped or equalized through the establishment of differentials in respect to mileage; weak words must be sufficiently protected by means of constructive mileage or arbitraries. All these departures from the general rule are of course to be determined on the merit of each individual case. There can be no absolute basis. Limitations, if they are to be made all, depend upon the policy itself and the surrounding conditions.

All the trouble in relation to the rate systems comes of the mistaken idea that railway charges can be fixed voluntarily by the carriers, and that they permit of mathematical construction. Fundamentally, the railway charges are the product of the historical development of the interoperation of diverse economic forces, in which competition constitutes the controlling factor, and which

are entirely beyond the power of the carriers. If the policy is to keep the rate structure in conformity to the economic law, complaints of discriminations must be ignored, and if it is to eliminate the source of complaints, the economic law must necessarily be ignored.

Apart from the question of policies, however, there may be cases where personal considerations or competitive desire beyond reasonable bounds influence some individual rates, which of course must be remedied by public regulation, but, on the whole, arbitrary interference from outside with a rate structure will be accompanied by harmful effects upon the carriers and industries, and, consequently, upon the public at large.

When the railways operate in larger consolidated units and are placed on parity with the water and other carriers in respect to public regulation, and industry and population fully develop to bring about a balance between the different localities, competition will thencease to affect greatly the rate structure, which will in the long run adjust itself approximately to what the distance principle requires, even if there is no pressure brought to bear upon it.

In Great Britain, the railway and other charges have been under public regulation in a manner similar to the American practice, but the rate situation has been very jealously preserved against outside interference. Consequently, their rate and fare structures appear the most irregular and inconsistent, but the

people seem to have been perfectly contented with the economic system. There has never been, and never will be, any serious attempt to fight against the economic law and introduce the long and short haul or distance principle. In Canada, too, whose trunk lines are the powerful rivals of some of the important railways of the United States, flexible regulation has been adopted in relation to the long and short haul rates. The laissez-faire policy is undoubtedly the best, except in extraordinary cases, where some factors which are repugnant to the sense of economic justice operate in the making of rates and other charges.

Policies as regards the regulation of railway charges are formulated under particular circumstances to reflect what is supposed to be the national opinion, but any attempt to theorize the distance policy and the nature and extent of the limitations, thereof, will prove a difficult, if not futile, task, attended with contradictions and inconsistencies in logic and practice.

REFERENCE

In the preparation of the present thesis, very free use has been made of various publications both in America and in Great Britain, dealing with the history, economics, regulation and law of the railway and other carriers, particularly of the following:

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American Railway Economics	Sakolski
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